



Solutia Area 2 Superfund Site

Solutia - Sauget Area 2
Project Health and Safety Plan

Revision 1

August 2003

Prepared by

Inquip Associates, Inc

for


Solutia, Inc
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St. Louis, MO 63141

HEALTH AND SAFETY POLICY

Employees are our most valuable and an important asset. Preventing personal injuries and occupational illnesses will be given the highest priority. It is the policy of Inquip Associates, Inc. (Inquip) to provide and maintain a safe and healthful working environment by eliminating unsafe acts and conditions and following operating practices which will assist in safeguarding all employees.

All levels of management at Inquip are responsible for providing the resources necessary to maintain a safe working environment. Every effort will be made to ensure that employees accomplish their assigned tasks safely.

Safety is everyone's responsibility. It is Inquip's goal to create a safety culture among its employees, and to foster an understanding that he or she has the ultimate responsibility to work safely. Inquip is committed to safety and expects the same commitment of all employees.


Project Manager

9-3-03
Date

ABSTRACT

The purpose of this Health and Safety Plan (HASP) is to provide a written assessment of potential safety and health hazards associated with the performance of work at the Solutia - Sauget Area 2 Superfund Site (Area 2 site), and to specify minimum acceptable protective equipment that will be used and procedures that shall be followed during the performance of work. The requirements of this plan are applicable to all Subcontractor personnel, including lower-tier Subcontractors.

The Subcontractor and lower-tier Subcontractors are responsible for Subcontractor contractual agreements and for full compliance, including compliance by lower-tier Subcontractors, with all applicable standards of 29 CFR 1910, 29 CFR 1926, the U.S. Environmental Protection Agency (EPA), Illinois State regulations, and Solutia regulations and orders that are in effect at the Area 2 site.

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1. INTRODUCTION

The purpose of this Health and Safety Plan (HASP) is to provide a written assessment of potential safety and health hazards associated with the performance of work at the Area 2, and to specify minimum acceptable protective equipment that will be used and procedures that shall be followed during the performance of work. The requirements of this plan are applicable to all Subcontractor personnel, including lower-tier Subcontractors.

All work performed at the Area 2 site shall be performed in a safe and orderly manner that will not create a hazard to health, property, and/or the environment. The implementation of safe working practices and the safety of equipment and facilities shall be subject to Inquip approval. However, Inquip approval does not constitute direction to employ specific safety practices nor does it relieve the Subcontractor from its responsibility for safety. Failure of the Subcontractor to comply with safety regulations and/or to conduct activities in a safe manner shall constitute cause for issuance of a Safety Violation Notice or a Stop Work Order.

Any Subcontractor and lower-tier Subcontractors are responsible for Subcontractor contractual agreements and for full compliance, including compliance by lower-tier Subcontractors, with all applicable standards of 29 CFR 1910, 29 CFR 1926, the U.S. Environmental Protection Agency (EPA), Illinois State regulations, and Solutia regulations and orders that are in effect at the Area 2 site. Inquip will make inspections under the Occupational Safety and Health Administration (OSHA) format and require corrective actions for all deficiencies discovered. Willful violation, refusal, or failure to abate violations of safety, health, and/or environmental standards or rules may be justification for removal of personnel from the site and/or contract termination.

Inquip reserves the right to invoke the OSHA general duty clause on any operation which, in the opinion of Inquip, is being conducted in an unsafe manner, even though the infraction is not specifically spelled out in the regulations or this Health and Safety Plan. This will be based on the concept of prior knowledge as represented by other industry consensus standards.

All employees are encouraged to report environmental, health, and safety concerns to their management. Subcontractors or subtiers shall not reprimand or otherwise take disciplinary action against their employees for reporting such concerns. If environmental, safety, and health concerns are not resolved by the employee's management, they may be brought to Inquip's attention either informally through verbal communication or formally by letter delivered to the onsite Inquip safety officer.

1.1 Site History

Insert Site History

1.2 Site Description

The site and surrounding properties are generally categorized as either Uncontrolled Areas or Controlled Areas:

- Uncontrolled Areas are those areas of the site and surrounding properties where special controls are not needed to protect workers from potential health hazards or hazardous constituents left by previous or current activities at the area 2 site. Uncontrolled Areas include the Office Trailer Area and support facilities outside potentially contaminated areas.
- Controlled Areas are those portions of the site and surrounding properties where special controls are needed to protect workers from potential health hazards or hazardous constituents left by previous activities or current activities. Controlled Areas will be determined by performing real time area sampling.

During the course of work, the work may create hazards in Uncontrolled Areas that warrant worker protection as identified in this HASP. These hazards include, but are not limited to, the use of heavy construction equipment, chemicals, electrical power, and the performance of activities such as excavation or bentonite mixing. Additional worker protection issues that are applicable in Uncontrolled Areas include biological hazards (e.g., biting and stinging insects, venomous snakes) and temperature extremes.

The specifications may describe work that is to be done in Uncontrolled Areas that will convert the work site to a Controlled Area. For example, excavations into the cover over the existing landfill. The landfill as is presents no hazard to workers. However, excavation of the cover material would create the potential for worker exposure to the contents of the landfill. The work zone for that task would be classified as a Controlled Area.

Work inside Controlled Areas involves the potential for worker exposure to some or all of the contaminants remaining from past activities, as well as any hazards introduced based on the type of work being performed, work methods, and materials used.

1.3 General Safety Provisions and Inspections

1.3.1 Inquip Management/Supervisor Responsibilities

Inquip shall make and document daily work area safety inspections and take corrective actions. These safety inspection documents shall be made available to the Solutia upon request. The Inquip supervisor shall inspect work activities against the hazardous work controls that are specified in applicable permits or this plan. In addition, a competent person designated as the Inquip safety representative shall participate with the onsite management in inspections of all

work areas. Where danger to personnel is imminent, the construction engineer, safety supervisor, or any Inquip personnel will stop the activity until the hazard has been abated.

To control or eliminate hazards and other exposures that may result in injury or illness, the Inquip supervisor shall instruct each employee in the recognition and avoidance of unsafe conditions and the regulations applicable to their work environment.

Safety meetings shall also be conducted before work begins at the start of each workday. All personnel are required to attend these meetings. Each day, records of the topics covered during these meetings and sign-in sheets of the attendees shall be forwarded to construction engineer.

1.3.2 Equipment and Tool Inspections

All equipment and tools shall be subject to a safety inspection conducted by Inquip, upon arrival at the site, prior to being placed into service. Additional equipment inspection requirements are detailed in Section 6.

1.3.3 Temporary Facilities

The locations for all temporary facilities, including but not limited to, office trailers, and laydown areas, shall be approved by the construction engineer prior to being placed on site.

1.4 Nonconforming Conditions and Practices

Inquip and Subcontractor personnel have the authority to stop activities when violations of safety, health, or environmental requirements are observed until such violations are corrected. Such violations may include, but are not limited to, the following examples:

- Lack of proper PPE as specified in this plan (e.g., hard hats, safety glasses, hearing protection, respirators, coveralls, gloves, and taped interfaces).
- Lack of fire watch during torch cutting operations.
- Unavailability of specified emergency equipment (fire extinguishers, emergency eyewash, spill absorbent, and first-aid supplies).
- Improper PPE doffing sequence.
- Unsecured ladders.
- Lack of GFCI protection, when such equipment is required.
- Inadequate dust control (as evidenced by visible dust emissions or instrument readings above specified action levels).
- Inadequate posting or barricades (e.g., flagging of open trenches, or the swing radius of cranes).
- Wearing torn coveralls or gloves in contaminated areas.
- Inadequate lighting (as evidenced by instrument readings).
- Scaffolding without locked wheels or guardrails.
- Climbing scaffolds without an approved access ladder.
- Extension cords with missing ground prongs.
- Unlabeled or improperly labeled containers.
- Failure to report a spill of an unidentified substance or reportable quantity of a hazardous material.

- Flagrant violations of the health and safety requirements of this health and safety plan and applicable OSHA regulatory requirements.

1.4.1 Safety Violation Notice

The Safety Violation Notice is a form used by Inquip to document safety violations and housekeeping problems on site.

Safety Violation Notices will be issued by the on-site safety officer. The on-site safety officer does not have to witness the violation, but can serve the notice from information he receives from other Inquip staff.

Safety Violation Notices shall include, at a minimum, a corrective action program and the date the corrective actions must be taken.

Disciplinary Actions

When disciplinary action is required, the party will be identified. If two Safety Violation Notices have been written against an employee in 1 year, the employee shall be removed from the project for three work days. If an employee receives three notices in 1 year, the employee shall be barred from the project. Under some very serious violations, an employee may be barred from the site without notice. Examples of serious violations include, but are not limited to, theft of property, vandalism, fall protection violation, fighting, or possession of contraband substances or articles.

- Employees who commit unsafe acts that result in injuries to themselves, or others, or property damage may be terminated and barred from area 2 site for the remainder of the project's existence.
- Employees involved in repetitive safety violations and who are terminated for safety violations will be barred from area 2 site for a minimum of 1 year. Should the employees be involved in safety violations after rehire, they will be barred from the area 2 site for the balance of the project's existence.

1.5 Incident Reporting

Personnel are responsible for immediately reporting to the on-site safety officer any event, that may adversely impact personnel or the environment or result in damage to equipment, regardless of the severity. All "near-misses" must also be reported. A "near-miss" is an event that did not, but had the potential to, cause injury or damage.

It is the responsibility of Inquip to investigate all injuries, property damage, environmental events, and near-misses.

After any injury, including those requiring only minor first-aid, the on-site safety officer shall immediately be notified.

Except as may be necessary to protect personnel and to minimize environmental or equipment damage, the accident/incident scene shall be preserved so as to allow an accurate investigation as to what occurred, the causes, and corrective measures to prevent recurrence.

2. CONTAMINANT AND HAZARD DESCRIPTION

Potential hazards associated with work at the area 2 site include construction safety hazards as well as chemical exposure hazards.

Examples of potential construction hazards in Controlled Areas and Uncontrolled Areas may include, but are not limited to the following:

- Slips, trips, or falls from working on wet surfaces or in poorly illuminated areas.
- Improperly secured loads during lifting or rigging activities.
- Operation of power tools or equipment.
- Utility installation and maintenance.
- Building construction.
- Falling or flying objects.
- Falls from ladders or elevated work platforms.
- Clearing and grubbing.
- Confined spaces.
- Heavy equipment operation.
- Motor vehicle operation.
- Road grading and paving.
- Excavations.
- Drowning.
- Off-loading/on-loading mobile equipment.
- Use/exposure to chemical products.

2.1 Area 2 Contaminants in Controlled Areas

(NOTE: Additional chemical and physical hazards may exist from materials brought on site by Inquip to perform work.)

The health effects and potential chemical hazards associated with the contaminants identified in Appendixes B are included in this section. The contaminants are classified into the following categories: "VOCs", "SVOCs", "PCBs", "Dioxins", "Heavy Metals" and "Pesticides." Separate tables address each of the categories.

The contaminants are listed by common name. The action level for each chemical contaminant is based on the lower of the Occupational Safety and Health Administration (OSHA) Permissible Exposure Limit (PEL) or the American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV). For contaminants not listed as confirmed or suspected human carcinogens, one-half the lower of the PEL or TLV is listed. For contaminants listed as confirmed or suspected human carcinogens, one-fifth of the lower of the PEL or TLV is listed.

These levels are based upon the as-low-as-reasonably-achievable (ALARA) concept utilized by the Department of Energy. Inquip shall utilize engineering controls as the primary means to maintain employee exposures below the action levels listed in the tables. If this cannot be accomplished, these controls shall be supplemented with other controls listed in Sections 4 and 5.

Table 1 lists contaminants at the site. The list includes solids, liquids, or gases which may be a potential exposure hazard.

Table 1
Solutia Area 2
Maximum Known Soil Contaminate Concentrations

Constituents	Concentrations
VOCs	
1,1,1-Trichlorethane	12,000
Benzene	30,769
4-Methyl-2-Pentanone	250,000
Toluene	2,400,000
Chlorobenzene	100,000
Ethylbenzene	790,000
Total Xylenes	620,000
1,4-Dichlorobenzene*	1,200,000
Bis (2-Ethylhexyl) Phthalate*	1,100,000
Di-n-Butyl Phthalate*	900,000
o-Xylene	2,300,000
SVOCs	
1,4-Dichlorobenzene	1,030,000
1,2-Dichlorobenzene	606,000
1,2,4-Trichlorophenol	26,923
Naphthalene	200,000
2-Methylnaphthalene	160,256
n-Nitrosodiphenylamine	50,000
Pentachlorophenol	1,620,000
Phenanthrene	230,000
Fluoranthene	74,000
Pyrene	282,051
Butyl Benzyl Phthalate	3,646,154
Benzo(a)anthracene	121,795
1,2,4-Trichlorobenzene	0.0653
Chrysene	282.051
Phenol	3,875
Di-n-butyl Phthalate*	1,500,000
Bis(2-Ethylhexyl) Phthalate*	20,000,000
Di-n-Octyl Phthalate	310,000
PCBs	
Aroclor 1232	30,366
Aroclor 1242	1,871,795
Aroclor 1254	360,000
Aroclor 1248	85,000
Aroclor 1260	16,000,000
Dioxins	
Tetrachlorodibenzo-p-Dioxin	170 ng/g
Heavy Metals	
Cadmium	0.152
Copper	1.63
Mercury	0.0063
Nickel	0.371
Zinc	9.52
Lead	392
Cyanide	0.015

SOLUTIA – SAUGET AREA 2 ACTION PROJECT HEALTH AND SAFETY PLAN

Constituents	Concentrations
Antimony	17.9
Arsenic	216
Chromium	3.65
Selenium	0.0599
Silver	0.0302
Thallium	0.00089*
Aluminum	ND
Iron	ND
Magnesium	ND
Pesticides	ND

Notes-

Units – Parts Per Billion (ppb)

*URS HASP

Table 1
Solutia Area 2
Maximum Known Groundwater Contaminants*

Constituents	
VOCs	
Methylene Chloride	52,000
Trans-1,2-Dichloroethene	14,000
2-Butanone	62,000
Trichloroethene	83,000
Benzene	190,000
4-Methyl-2-Pentanone	38,000
Tetrachloroethene	10,000
1,1,2,2-Tetrachloroethane	12,000
Toluene	15,000
Chlorobenzene	180,000
1,2-Dichloroethane	3,000
2-Hexanone	3,500
SVOCs	
Phenol	190,00
1,4-Dichlorobenzene	15,000
1,2-Dichlorobenzene	11,000
4-Methylphenol	23,000
4-Chloroaniline	15,000
2-Chlorophenol	33,000
2,4-Dimethylphenol	2,800
2,4,6-Trichlorophenol	6,000
2-Nitroaniline	2,000
Pentachlorophenol	35,000
Acenaphthylene	3,900
Heavy Metals	
Arsenic	133
Cadmium	11
Lead	6,350
Cyanide	1,560
Pesticides	
PCBs	
Dioxin/Furan	
	ND

Notes –

Units – Parts Per Billion (ppb)

* Reference URS Hasp

In addition to the above, workers may be exposed to physical hazards such as temperature extremes and noise. Table 2 lists the potential health effects related to heat stress, cold stress, and noise.

In addition to the hazards listed in this section, there is a potential for worker exposure to biological hazards. The primary biological hazards of concern include insect bites, venomous or nonvenomous snake bites, and exposure to poison ivy. The Illinois area is a potential area for Lyme disease, a disease carried by some types of ticks.

Table 2 Physical Hazards

PHYSICAL HAZARD	ACTION LEVEL	HEALTH EFFECTS
Cold Stress	None	<p>Acute Response:</p> <p><u>Hypothermia</u> - Acute problem resulting from prolonged cold exposure and heat loss. If fatigued during physical activity, an employee will be more prone to heat loss. As exhaustion approaches, the blood circulatory system which helps maintains body warmth is overcome. Shivering is one of the body mechanisms to produce heat for body heat maintenance. If body temperature continues to fall, shivering ceases. Rapid loss of heat then occurs and critical cooling begins.</p> <p><u>Frostbite</u> - Without proper cold weather attire, exposed skin in the presence of temperature or wind chill temperatures below freezing may result in sharp tingling sensations of exposed skin, numbness, and partial or complete loss of sensation to exposed skin areas. Continued exposure without preventive action may result in permanently damaged skin tissue.</p> <p>Chronic response:</p> <p><u>Trench-foot</u> - Without proper foot protection, swelling, tingling, itching, and painful foot tissue may occur due to a combination of cold temperatures and persistent dampness or wet feet. Small areas of skin may blister or skin tissue may be damaged due to the cold and wet condition.</p>
Heat stress	Oral temperature of 38°C (100.4°F) and/or pulse rate of 110.	<p>Chronic response: Physical disability caused by excessive heat exposure - in order of severity:</p> <p><u>Heat rash</u> - itching skin. Caused by the opening of sweat ducts become clogged due to swelling of the surface of the skin which leads to inflammation of the sweat glands.</p> <p><u>Heat cramps</u> - muscle spasm and pain in muscles of the abdomen and extremities. Caused by replacement of water without adequate replacement of salts (sodium, potassium, calcium).</p> <p><u>Heat exhaustion</u> - fatigue, exhaustion, headache, nausea, cool clammy skin, and appearance which may be pale or flushed. Caused by extreme loss of fluids and salts. The supply of blood plasma and cardiac output are rapidly becoming inadequate to meet continuing demand to regulate body heat.</p> <p><u>Heat stroke</u> - flushed skin, high body temperature (usually above 105°F), cessation of sweating, headache, numbness, fast pulse, rapid breathing rate, confusion, convulsions, and loss of consciousness. Complete breakdown of body heat regulatory system due to lack of fluids necessary for sweat production.</p>

Table 2 Physical Hazards (Continued)

PHYSICAL HAZARD	ACTION LEVEL	HEALTH EFFECTS
Hearing loss	85 dBA: Suitable hearing protection. 90 dBA: Posting of area as noise hazard.	<p>Acute loss: Sudden loss due to damage to the ear drum or the middle ear noise conductive network. May occur as a result of a severe head injury. Extremely loud noises or sudden intense pressure waves could cause acute loss; however, these are highly unlikely at this site.</p> <p>Chronic loss: Gradual loss as a result of some medications such as mycins, aspirin, and some diabetic medication, from some diseases such as mumps or diabetes, from aging, or from nerve deafness due to continuous and long-term exposure to high noise levels without use of hearing protection both at work and off work.</p> <p>Hearing loss due to nerve deafness is gradual and usually unrecognized. Initial symptoms may include ringing of the ears at the end of the workday or a temporary decrease in ability to hear sound. The ringing and temporary decrease is a result of inner ear nerve fatigue; recovery is usually complete after a 14-hour quiet period. Without hearing protection, repeated noise exposures may damage the inner ear and permanent loss may occur.</p>

3. WORK PRACTICES AND ENGINEERING CONTROLS

Sections 3.1 through 3.8 are applicable to work in Uncontrolled and Controlled Areas. Section 3.9 is only applicable to work in Controlled Areas.

3.1 Special Requirements for Entry Into Confined Spaces

All confined space entries at the Area 2 will be in accordance with Occupational Safety and Health Administration (OSHA) 29 CFR 1910.146 and the following requirements. Inquip shall maintain a written Permit-Required Confined Space Entry Program and all training records required by 29 CFR 1910.146.

Entry into a confined space will be considered to have occurred as soon as any part of the entrant's body breaks the plane of an opening into the space.

A confined space is considered to be any space that is large enough and so configured that it can be bodily entered to perform work, *and* has limited or restricted means of entry or exit, *and* is not designed for continuous employee occupancy.

Permit-required confined spaces are those spaces that have one or more of the following characteristics:

- Contain or have the potential to contain a hazardous atmosphere.
- Contain a material that has the potential for engulfing an entrant.
- Have internal configurations such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross section.
- Contain any other serious safety or health hazards.

All confined spaces at the area 2 site are considered to be permit required confined spaces unless otherwise determined by the on-site safety officer.

The following list is provided as an outline of the major requirements for entering confined spaces at the area 2 site:

- All personnel shall coordinate entry operations with the on-site safety office.

- All personnel shall participate in a debriefing meeting with the on-site safety officer upon completion of all permit-required confined space entries. Debriefing comments shall be included on the Confined Space Entry Permit.
- Hazard identification and assessment must as a minimum include:
 - Posting of permit-required confined spaces that can be inadvertently entered.
 - Initial atmospheric monitoring as necessary.
 - Continuous air monitoring in confined spaces that cannot be isolated.
 - Pre-entry atmospheric monitoring performed immediately prior to entry (as specified in Section 5).
 - Physical characteristics, configuration, and location.
 - Methods for entry and exit.
 - Energy and hazardous material sources.
 - Potential for changing conditions.
- Implementation of appropriate control measures for permit required confined spaces must include, as a minimum, the following:
 - Ventilation (as required per Table 5-1).
 - Atmospheric monitoring as specified on the confined space entry permit.
 - Mechanical retrieval equipment for personnel entering vertical confined spaces greater than 5 ft in depth.
 - Full-body harness with retrieval line attached at the center of the back between the shoulders or above the head for all entry personnel. The retrieval line may be detached if the retrieval equipment would increase the overall risk of the entry or would not contribute to the rescue of the entrant. Retrieval system detachment must be authorized by the on-site safety officer and documented on the Confined Space Entry Permit.
 - Fall protection as required on the permit.

- Isolation and lockout/tagout as indicated on the permit.
 - Cleaning and decontaminating space, using remote methods where feasible.
 - Selection and use of personal protective equipment (PPE) in accordance with the work and hazards involved.
 - Proper barricading/signing to prevent unauthorized entry and dropping of tools or equipment into the opening.
- Attendants shall maintain communication with and account for the well being of authorized entrants during the course of work in the confined space. One attendant must be available for each confined space entry. Simultaneous monitoring of more than one confined space by an attendant is prohibited. Should rescue become necessary, attendants may attempt only non-entry rescue operations.

3.2 Hearing Conservation Program

Personnel shall comply with 1910.95, *Occupational Noise Exposure*. InquiP has established the American Congress of Governmental Industrial Hygienist (ACGIH) TLV of 85 decibels A-weighted (dBA) 8-hour time weighted average (TWA) as the project exposure level (based on 3 dB exchange rate). No unprotected exposures to noise levels above 115 dBA will be permitted.

Whenever feasible, engineering controls shall be instituted to attenuate noise at the source to attain acceptable low noise levels, preferably below the 85-dBA TLV-TWA. All equipment brought on site shall be fitted with proper noise control devices (mufflers, pads, etc.) to limit both worker exposure and ambient noise levels. Equipment shall also be maintained to limit excessive noise resulting from poor maintenance or lubrication practices.

All HPDs shall have a minimum noise reduction rating (NRR) capable of attenuating the wearer's noise exposure to below 85 dBA.

Field attenuation and hearing protector efficiency will be evaluated by the guidelines in Appendix B of OSHA 29 CFR 1910.95, *Occupational Noise Exposure* using the 7dB reduction method.

Posting requirements for noise hazards shall be instituted for those areas routinely exhibiting noise levels at or above 90 dBA. HPDs will generally be worn for noise levels exceeding 85 dBA. Typical situations using equipment where noise levels may exceed 85 dBA include, but are not limited to, the following:

- Compressor use
- Drill rig operation
- Electrically powered hand tool use
- Gas-powered hand tool and equipment use
- Generator use
- Heavy equipment operations
- Man lift operation

3.3 Hazard Communication Program

3.3.1 Requirements for Personnel using regulated Materials

Inquip shall comply with all the requirements of the OSHA Hazard Communication Standard (29 CFR 1926.59). Each Inquip employee shall be trained in accordance with the Hazard Communication Program. Inquip shall maintain a copy of the MSDS for each hazardous chemical as defined in the OSHA Hazard Communication Standard. Secondary containers shall be labeled in accordance with the Hazard Communication Program with minimum labeling requirements of 29 CFR 1926.59.

Each MSDS will be reviewed to determine if the product contains 0.1% or more of a carcinogen or suspected carcinogen. According to 29 CFR 1910.1200(d)(4), the following resources shall be used to establish that a chemical is a carcinogen or potential carcinogen for hazard communication purposes.

- National Toxicology Program (NTP), *Annual Report on Carcinogens* (latest edition); Carcinogens are those chemicals listed by NTP as “known carcinogens” and potential carcinogens are those listed by NTP as “reasonably anticipated to be carcinogens.”
- International Agency for Research on Cancer (IARC) *Monographs* (latest editions); carcinogens are those chemicals listed in Group I *Carcinogenic to Humans* and potential carcinogens are those listed in Group IIA *Probably Carcinogenic to Humans*.
- 29 CFR Part 1910, Subpart Z, *Toxic and Hazardous Substances, Occupational Safety and Health Administration*.

Products determined to be carcinogenic shall not be used at the Area 2 site unless a suitable replacement material cannot be found. If a suitable replacement material cannot be found, Inquip shall develop written procedures to keep exposures as low as reasonably achievable (ALARA).

These control procedures should include a description of intended use, establishment of a regulated area, engineering controls, warning signs, appropriate hygiene practices, and emergency response procedures.

Inquip, including each lower-tier Subcontractor, shall maintain copies of MSDSs (at the work site) for products they will be using and shall maintain a copy of the Company's written Hazard Communication Program. Documentation of employee training shall be available for inspection, upon request. Hazards shall be properly labeled and posted as required by 29 CFR 1926.59.

Inquip is responsible for adherence to all the rules and regulations of this site especially as they pertain to the storage, labeling, and placarding of chemical products as written in, but not limited to, National Fire Protection Association (NFPA) and the Code of Federal Regulations (CFR).

3.3.2 Service Subcontractor MSDS Requirements

Second tier Subcontractors who bring small quantities of materials on site to maintain Inquip office equipment, fire extinguisher system, or other similar tasks will be exempt from submitting a MSDS, provided the following requirements are observed:

- Subcontractor must have the MSDS for materials brought on site with them at all times.
- None of the materials brought on site shall be stored at the area 2 site and must be removed at the end of the day.

3.4 Control of Ozone Depleting Substances

Title VI of the *Clean Air Act* (CAA) regulates the protection of stratospheric ozone. The use of ozone depleting substances (including materials with substances containing ozone depleting substances) is not allowed at the area 2 site. A list of ozone depleting substances is included in Appendix D. Note: Class 2 substances may be allowed on a case-by-case basis upon approval from Inquip, if no substitute can be identified.

3.5 Dust (Particulate) Control Requirements

Inquip shall use water spraying or other Solutia approved methods as necessary to suppress dust emissions to the lowest practical level. Inquip shall also minimize dust emissions by minimizing drop heights when transferring material. Excessive visible emissions of particulates shall not be permitted. Total airborne dust concentrations, as measured in the Controlled Areas, shall at no time exceed a limit of 1 mg/m³ unless otherwise authorized in writing by the on-site safety officer.

The limit in Uncontrolled Areas is 5 mg/m^3 . Excessive runoff due to dust control operations shall not be permitted.

If measurement of the total airborne particulate concentration is not feasible or practical, Inquip will evaluate the airborne particulate levels by visual inspection, and if, in the Inquip's judgment, the airborne particulate is visible, then additional particulate control measures will be implemented.

Inquip shall be responsible for ensuring that all operations are conducted in a manner that prevents airborne contaminants and total airborne particulate from exceeding established limits.

3.6 Extreme Temperature Requirements

Heat stress and cold stress prevention programs shall be implemented during periods of warm and cold weather. The heat stress prevention program shall include provisions for worker acclimatization and implementation of heat stress prevention measures as described below and in Table 5-1. The on-site safety officer may monitor personnel for temperature and heart rate as detailed in Table 5-1. For cold stress prevention, personnel shall use properly insulated clothing for the head, hands, feet, and body.

During periods of hot weather or when workers may be affected by heat stress, an adequate supply of cool drinking water and a shaded rest area shall be made available. During cold weather periods, a heated shelter area shall be readily available near the work site.

Responsibilities for providing drinking water, cold weather clothing, ice vests, and any other equipment, supplies, and facilities necessary to ensure an effective program for temperature extremes are contained in the Health and Safety Plan (HASP) checklist.

3.7 Requirements Applicable to Controlled Areas

3.7.1 Contamination Control

Inquip shall mark and secure all hoses and cords crossing the boundaries of controlled areas to help minimize the spread of contamination and safety hazards. Electrical cords and lines that are not under pressure may be taped in place and tagged near the end to indicate that external surfaces may be contaminated. Hoses containing water under high pressure shall be secured, where possible, to prevent whiplash motions caused by loss of operator control. Hoses that may contain contamination shall be conspicuously labeled "CAUTION-INTERNAL CONTAMINATION." Labels or tags shall have a yellow background. Labeling is not required on portions of hose inside restricted areas. Labels or tags shall be placed on opposing sides of the

hose, where necessary, to ensure that they are clearly visible from all vantage points and hose positions. At a minimum, labels or tags should be placed every 40 ft along the length of the hose.

Unless otherwise specified by the on-site safety officer, personnel shall procure sufficient tools so that tools frequently required in the Contamination Area may be dedicated for that use. In the event repairs or modifications to tools or equipment are needed, the repairs or changes shall be made, where reasonably practical, in an Uncontrolled Area or a portion of the Controlled Area with low levels of contamination.

3.7.2 Communication Systems

When working within Controlled Areas, personnel shall check radios for operability.

3.8 Requirements for Removing Samples from Site

When required to ship materials off-site for analysis, Inquip personnel shall comply with the requirements of this section.

3.8.1 Notification Requirements

Inquip shall notify the laboratory of the potential contaminants in the materials that the laboratory is expected to analyze. All samples that are removed from the site shall be returned to the site for proper disposal upon completion of the analysis.

3.8.2 Chain of Custody Requirements

Inquip personnel are required to complete a Chain of Custody Form for all environmental and personnel samples collected at the area 2 site and sent off site for chemical, or physical analysis. This includes groundwater, surface water, soil, rock, sediment, air, and other samples.

Chain of custody must be maintained to ensure that samples are not tampered with or altered, before laboratory receipt or while in the possession of the laboratory. Chain of custody records provide accurate documentation of each sample from the time of collection through receipt of samples to analytical laboratory.

3.9 Requirements for Work Inside Controlled Areas

Requirements for work inside Controlled Areas include:

- Entry/exit through an Access Control point: Each worker and all equipment must enter at the established access point for the Controlled Area where the employee will

perform his work. Every worker must sign in (and out) so that all workers can be accounted for in the event of an emergency

- **Training:** Training requirements for hands-on work inside Controlled Areas are detailed in Section 8 and typically include, at a minimum, OSHA hazardous waste training, general employee training.
- **Medical surveillance:** Initial and annual physicals are required for workers and supervisors required to wear respirators while working inside Controlled Areas, as detailed in Section 7.
- **Monitoring:** Workers are monitored for chemical exposures as detailed in Section 5.
- **Personal protective equipment (PPE):** Workers are required to wear protective clothing and equipment for many activities performed inside Controlled Areas, as detailed in Section 4.
- **Contamination Control:** Work inside Controlled Areas must be performed in a manner that prevents track-out of contaminants on equipment and personnel, minimizes worker exposures, and protects the environment, as detailed in Sections 3 and 10.

4. PERSONAL PROTECTIVE EQUIPMENT

The use of appropriate personal protective equipment (PPE) shall be required for personnel involved in operations where exposure to hazardous conditions exists or where such equipment is needed to reduce hazards. Personal protective equipment shall be selected and utilized in accordance with Occupational Safety and Health Administration (OSHA) standards and this Health and Safety Plan (HASP). All modifications to PPE requirements shall require on-site safety officer authorization prior to implementation.

4.1 Safety Apparel for Work at the Area 2 Site

Personnel performing work at the area 2 site shall, at a minimum, be required to wear the following standard safety apparel:

- Hard hats (with the bill facing forward) meeting the requirements of ANSI Z89.1 for protection from falling objects.
- Safety glasses with side shields meeting the requirements of 29 CFR 1910.133(a)(2) and (b)(1) or (2), as appropriate.
- Sturdy work shoes or boots

NOTE: Exemption for surveying services may be made for safety glasses and hard hats.

Long pants and shirts with sleeves at least 4 in. long will be required. Tank tops, cut-off pants, and tennis shoes will not be permitted. Loosely fitting clothes will not be permitted near rotating machinery or equipment. Inquip strongly recommends that personnel do not wear jewelry in construction areas.

Employees working at the site will be required to wear hard hats that meet the American National Standards Institute (ANSI) Z 89.1 standard, as prescribed in 29 CFR 1910.135, *Head Protection*. Hard hats shall be worn with the peak forward and the suspension properly installed. Hard hats shall not be damaged, painted, deformed, or marked in any way except for markings required to identify the employee, company, craft, or title.

Eye protection shall, at a minimum, consist of safety glasses with permanently affixed side shields that meet the ANSI Z 87.1 standard. Prescription glasses shall also meet the ANSI standard and be provided with side shields. Cover glasses used over prescription glasses will be permitted. Safety glasses shall be worn at all times in Controlled Areas and in any other area where construction activities are taking place. Face shields shall not be worn in lieu of safety glasses.

4.2 Safety Apparel for Work in Restricted Areas Inside Controlled Areas

Employees performing work in soil contamination areas may be required to wear the following additional standard safety apparel:

- Sturdy work shoes with disposable or reusable boot covers or chemical-resistant steel-toed safety boots (16 in. minimum polyvinyl chloride (PVC) or equivalent).
- Cotton work gloves.
- Coveralls.

4.3 Additional Personal Protective Equipment Requirements for Controlled and Uncontrolled Areas

Additional PPE requirements for specific tasks or operations in Controlled and Uncontrolled Areas are described in Table 4-1.

Hearing protection devices (HPDs) are required for noise exposure levels that exceed 85 dBA, 8 hour TWA. However, HPDs are recommended whenever noise exposure levels exceed 85 dBA.

Leather work gloves will be required when handling material or performing work that could cause cuts, abrasions, or other mechanical injury. Chemical protective gloves (selection shall be based on published chemical protective clothing guidelines) shall be worn where there is a reasonable probability of direct contact with hazardous chemicals. Protective gloves shall be worn, as required, depending on the nature of work activity and hazard potential. When there is risk of injury to the metatarsal bones, such as in the use of jumping jack soil compactors, metatarsal guards shall be worn.

Each affected employee shall wear protective footwear when working in areas where there is a danger of foot injuries due to falling or rolling objects or objects piercing the sole, and where such employee's feet are exposed to electrical hazards. Such footwear shall meet the requirement of 29 CFR 1910.136, *Foot Protection*.

Reflective safety vests and/or high visibility clothing shall be worn by personnel in unbarricaded areas where there are moving vehicles or construction equipment; when directing traffic; working in an excavation where a bucket is operating; working within 10 ft of a highway; and in a temporary storage area.

4.4 Respirator Usage at the Area 2 Site

Inqup shall require workers to wear respirators as specified in Table 4-1. The use of positive pressure respiratory protection devices is recommended as appropriate to alleviate worker fatigue and increase comfort.

Respirator fit-testing shall be performed for all employees required to wear such equipment. All employees required to wear respirators shall inspect their respirators before and after each use. Routine inspection, cleaning, and storage of respirators is the responsibility of the Subcontractor and shall be in accordance with OSHA 1910.134. Respirators shall be cleaned with a mild soap and clean warm water or equivalent on at least a weekly basis when in use.

Table 4-1 Additional Personal Protective Equipment Guidelines for Specific Tasks

TASK DESCRIPTION ^(a)	ADDITIONAL PERSONAL PROTECTIVE EQUIPMENT ^{(b)(c)}	RESPIRATORY UPGRADE IF REQUIRED BASED ON MONITORING RESULTS
Clearing and grubbing, (chainsaw operations; brush saw operations).	Steel-toed boots. Hearing protection devices.	Full-face piece APRs with HEPA cartridges.
Excavation of contaminated soils.	Where excavations contain contaminated water, waterproof coveralls (or jacket and pants), and gloves will be required.	Full-face piece APRs or PAPR with HEPA cartridges.
Welding/cutting/grinding.	Proper eye and face protection consistent with OSHA 1910.133, <i>Filter Lenses Protection Against Radiant Energy</i> ; fire resistant coveralls, leather gloves Respirator usage is as follows: <ul style="list-style-type: none"> • Full-face air purifying respirators with HEPA cartridges ^(c) required for cutting/welding/grinding on galvanized steel, stainless steel, non-ferrous metals, and metals with toxic material coatings, such as lead or cadmium-bearing paints. Full face-piece APRs with HEPA cartridges may also be required where generated smoke could contain radioactive contamination. • Air supplied respirator is required for all plasma arc cutting in conjunction with good ventilation. • Full-face piece respirator with HEPA cartridges with arc cutting or gouging in conjunction with good ventilation. 	Full-face piece powered air purifying respirators (PAPRs) with HEPA cartridges.
Heavy equipment operation	No coveralls are necessary for operators who do not perform work on the ground and only enter and exit the work zones to access their equipment. They would be required where respirator usage is required.	Full-face piece APRs with HEPA cartridges.
Use of pressure washing equipment for cleaning/decontamination of equipment.	Face shield, waterproof gloves, and coveralls (or rain suit). Boot covers or chemical resistant boots.	N/A

Table 4-1 Additional Personal Protective Equipment Guidelines for Specific Tasks (Continued)

TASK DESCRIPTION ^(a)	ADDITIONAL PERSONAL PROTECTIVE EQUIPMENT ^{(b)(c)}	RESPIRATORY UPGRADE IF REQUIRED BASED ON MONITORING RESULTS
Use of commercial chemical products, including paints and coatings.	Proper protective equipment per Material Safety Data Sheet (MSDS) requirements or use of acceptable published chemical protective clothing selection guidelines. (Modifications subject to review by the Contractor.)	Respirator upgrade depends on nature of material and monitoring results.
Pumping hazardous liquids and removing hazardous sludges, debris, and equipment from sumps, trenches, and pits.	Polyethylene-coated or Saranex-coated Tyvek coveralls with hoods, neoprene or nitrile outer gloves/cotton or surgical inner gloves, taped interfaces.	Full-face piece APRs with HEPA cartridges and/or Organic Vapor/Acid Gas cartridges depending on the nature of the contaminant.
Draining oils from equipment.	Neoprene or nitrile gloves, polyethylene-coated Tyvek coveralls over cotton coveralls.	
PCB decontamination and/or PCB waste handling.	Disposable boot covers, Saranex-coated Tyvek coveralls with hoods, neoprene or silvershield outer gloves/surgical inner gloves, taped interfaces.	Full-face piece APRs with combination HEPA/organic vapor cartridges
Installing fibrous glass insulation or other types of materials containing man-made mineral fibers.	Cotton coveralls ^(d) or disposable coveralls ^(e) , work gloves.	Full-face piece APRs with HEPA cartridges.
Working on or near water.	Life vest floatation device (staged safety belt, lifeline, ring, and buoy).	N/A

Table 4-1 Additional Personal Protective Equipment Guidelines for Specific Tasks (Continued)

TASK DESCRIPTION ^(a)	ADDITIONAL PERSONAL PROTECTIVE EQUIPMENT^(b)	RESPIRATORY UPGRADE IF REQUIRED BASED ON MONITORING RESULTS
Heavy equipment maintenance workers.	No additional requirements.	Full-face piece APR with appropriate cartridges.
Potential contact with acids and bases.	Chemical-resistant suit and outer gloves (as determined by the most recent edition of the Quick Selection Guide to Chemical Protective Clothing), inner surgical gloves, face shield, chemical splash goggles, chemical resistant boots, and taped interfaces.	Full-face piece air purifying respirators (APRs) with combination acid gas/organic vapor/HEPA cartridges or pressure demand air supplied respirator.
Potential contact with contaminated/ potentially contaminated water.	Chemical-resistant suit, neoprene or nitrile outer gloves, inner surgical gloves, face shield, chemical splash goggles, chemical resistant boots, and taped interfaces.	N/A
Sampling of process water and flushing of process water to the drains.	Face shield, chemical resistant boots, surgical gloves, splash apron.	N/A
Handling of sludges or contaminated solids.	Saranex or polyethylene coated Tyvek coveralls with hood, inner cotton coveralls (no street clothing allowed), neoprene 4 H Silvershield, nitrile outer gloves, inner surgical gloves, 16 in. chemical-resistant boots, and taped interfaces.	Full-face piece air purifying respirator (possible downgrade to no respiratory protection based on monitoring results), face shield with chemical splash goggles with combination acid gas/organic vapor/HEPA cartridges.
Potential exposure to untreated or partially treated water.	Chemical splash goggles. Splash apron. Neoprene, nitrile, or PVC gloves.	N/A
Handling of uncontaminated filter media.	No additional requirements.	N/A

Table 4-1 Additional Personal Protective Equipment Guidelines for Specific Tasks (Continued)

TASK DESCRIPTION ^(a)	ADDITIONAL PERSONAL PROTECTIVE EQUIPMENT ^(b)	RESPIRATORY UPGRADE IF REQUIRED BASED ON MONITORING RESULTS
Handling of small quantities of chemicals in the laboratory.	Face shield or chemical splash goggles and chemical resistant surgical gloves. Laboratory coat.	N/A
Operational startup of water treatment plants.	Splash apron, waterproof gloves, waterproof boots or boot covers, and face shield.	Full-face with HEPA/organic vapor/acid gas cartridges.

(a) Tasks described in this table are not applicable to all subcontracts.

(b) PPE specified in this column is required in addition to standard safety apparel.

(c) Half-face respirators may be worn upon prior written approval of the on-site safety officer.

(d) When cotton coveralls are used, they shall be removed after each work shift and left on site until the completion of the operation. When the operation is complete, coveralls shall be containerized.

(e) When disposable coveralls are used, the disposable coveralls shall be removed after each shift, bagged, and marked as per Section 3 of this plan. The open end of the trash bag shall then be sealed with duct tape and disposed of in the trash bin.

The on-site safety officer shall ensure that adequate corrective actions are implemented to abate any deficiencies discovered during routine inspection and maintenance of respiratory protection equipment. Any deficiencies and corresponding corrective actions shall be documented.

4.4.1 Supplied Air Systems Requirements

When using supplied air systems, on-site safety officer shall ensure that breathing air couplings are incompatible with outlets for non-respirable plant air or other gas systems. This will prevent inadvertent servicing of air line respirators with non-respirable gasses or oxygen.

4.5 Donning and Doffing

Instructions for donning and doffing protective clothing will be posted at the dress-out and exit points for the controlled work area when required. Potentially contaminated protective clothing must be removed without spreading contamination and in particular without contaminating the skin or inner garments. Workers shall exercise care to avoid touching the skin or inner garments with contaminated clothing, and shall not place anything in the mouth during the removal of protective clothing.

5. MONITORING

When Inquip performs monitoring for personnel exposures, it is done to verify engineering controls and PPE/respirator selection. The following sections describe the monitoring program (which is summarized in Table 5-1), exposure limits, and action levels which require additional engineering control measures and personal protective equipment (PPE).

Where feasible, engineering controls shall be used to maintain personnel exposures to hazardous chemicals below the threshold limit.

Tampering with monitoring devices will not be tolerated and may result in removal of the culpable individual from the site.

5.1 Monitoring Program Elements

5.1.1 Personnel Contamination Monitoring

Before exiting Contamination Areas, all personnel shall monitor themselves for visual signs of contamination. Personnel will be instructed in self-monitoring procedures, as necessary, during General Employee Training as described in Section 8 of this plan.

5.1.2 Noise Monitoring

Sound pressure levels will be monitored to delineate hearing protection areas. The on-site safety officer shall determine monitoring frequency and sample quantity. The frequency will be sufficient to adequately monitor areas where workers may be exposed to noise levels in excess of 85 dBA TWA (3 dB exchange rate). Suitable hearing protection shall be worn in areas with noise levels greater than 85 dBA TLV exposure level, or 90 dBA instantaneous.

5.1.3 Heat Stress Monitoring

Monitoring will consist of periodic measurement of worker body temperature during periods when work area temperatures exceed 85°F and protective clothing is required for the work activity. Monitoring may also be required for workers engaged in strenuous activities regardless of the protective clothing requirements. Monitoring frequency will be determined by the on-site safety officer and will be based on the work area temperature and the type of work being performed. Heart rate monitoring will not be required except when the action level for body temperature is exceeded, or when physical signs of stress are observed.

5.1.4 Confined Space Entry Monitoring

Prior to any confined space entry as defined in Section 3, a competent individual shall perform the atmospheric monitoring as described on the confined space entry permit to determine if a hazardous atmosphere exists. Typical areas of monitoring include oxygen, combustible gas, carbon monoxide, hydrogen sulfide, photoionizable substances, and any other toxic atmospheric contaminants that may be present based on information available on previous use of the confined space. If a hazardous atmosphere exists, as specified in Table 5-1, ventilation or ventilation in conjunction with respiratory upgrade will be required before entry. In no case shall a confined space be entered where the atmosphere exhibits greater than 5% of the lower explosive limit (LEL). For confined spaces that cannot be isolated, continuous monitoring in the space shall be required.

5.1.5 Oxygen

The on-site safety officer will monitor oxygen levels. Such monitoring includes, but is not limited to, excavation, material handling, welding, etc.

5.1.6 Explosive Atmosphere

The on-site safety officer will monitor explosive atmospheres. Such monitoring includes, but is not limited to, excavation, material handling, welding, etc.

5.1.7 Monitoring for Other Contaminants

It may be necessary to perform air monitoring for other airborne contaminants or IDLH conditions depending on the nature of work, the materials used, and the potential hazards involved.

Table 5-1 Monitoring Program Summary

HAZARD/SAMPLE TYPE	ACTION LEVEL (50% of either the current TLV or the PEL)	PRECAUTION IF ACTION LEVEL IS EXCEEDED	MONITORING FREQUENCY
CONFINED SPACE ENTRY^(a)			
Explosive gas.	>5% of the lower explosive limit (LEL) ^(b) .	Ventilation. If exceeded during entry operations, the space will be immediately evacuated. The on-site safety officer will be notified immediately and the permit will be canceled.	Prior to confined space entry and as designated on the confined space entry permit, or more frequently as determined by the on-site safety officer.

Table 5-1 Monitoring Program Summary (Continued)

HAZARD/SAMPLE TYPE	ACTION LEVEL (50% of either the current TLV or the PEL)	PRECAUTION IF ACTION LEVEL IS EXCEEDED	MONITORING FREQUENCY
Oxygen.	<19.5% or >23.5%.	Ventilation/upgrade to supplied air respirators (SARs) pressure demand (SCBA or airline respirator with 5-minute escape bottle ^(c)). If exceeded during entry operations, the space will be immediately evacuated. The on-site safety officer will be notified immediately and the permit will be canceled.	Prior to confined space entry and as designated on the confined space entry permit, or more frequently as determined by the on-site safety officer.
Carbon monoxide.	12.5 ppm 8-hour TWA.	Ventilation/appropriate respiratory and dermal protection.	Prior to confined space entry and as designated on the confined space entry permit, or more frequently as determined by the on-site safety officer.
Hydrogen sulfide.	5 ppm 8-hour TWA.	Ventilation/appropriate respiratory and dermal protection.	Prior to confined space entry and as designated on the confined space entry permit, or more frequently as determined by the on-site safety officer.
Photoionizable substances (for undetermined air contaminants).	5 ppm.	Ventilation/appropriate respiratory and dermal protection.	Prior to confined space entry and as designated on the confined space entry permit, or more frequently as determined by the on-site safety officer.
Any other toxic atmospheric contaminant that may be present based on available information on previous use of the confined space.	One-half of the PEL or TLV for the contaminant, or 20% for carcinogens, whichever is more stringent.	Ventilation/appropriate respiratory and dermal protection.	Prior to confined space entry and as designated on the confined space entry permit, or more frequently as determined by the on-site safety officer.

Table 5-1 Monitoring Program Summary (Continued)

HAZARD/SAMPLE TYPE	ACTION LEVEL (50% of either the current TLV or the PEL)	PRECAUTION IF ACTION LEVEL IS EXCEEDED	MONITORING FREQUENCY
GENERAL SITE ACTIVITIES (OTHER THAN CONFINED SPACES)			
TORCH/PLASMA ARC:			
Explosive gas.	>5% LEL.	No torch/plasma arc or abrasive saw cutting.	Prior to and during cutting.
Oxygen for processes where inerting is required.	>5%	No torch/plasma arc or abrasive saw cutting.	Prior to and during cutting.
Airborne contaminant fumes: zinc (galvanized steel) and nickel (stainless steel)	Zinc oxide 5.0 mg/m ³ Zinc metal dust 10.0 mg/m ³ Nickel metal dust 1.0 mg/m ³ Nickel tetra carbonyl 0.12 mg/m ³	No torch/plasma arc cutting	Prior to and during cutting.

Table 5-1 Monitoring Program Summary (Continued)

HAZARD/SAMPLE TYPE	ACTION LEVEL (50% of either the current TLV or the PEL)	PRECAUTION IF ACTION LEVEL IS EXCEEDED	MONITORING FREQUENCY
PCB's:			
Personnel.	0.5 mg/m ³ (8-hour TWA).	Ventilation/appropriate respiratory and dermal protection.	At the discretion of the on-site safety officer.

Table 5-1 Monitoring Program Summary (Continued)

HAZARD/SAMPLE TYPE	ACTION LEVEL (50% of either the current TLV or the PEL)	PRECAUTION IF ACTION LEVEL IS EXCEEDED	MONITORING FREQUENCY
OXYGEN:			
Area.	<19.5% or >25%	Ventilate the area. Stop work activities.	At the discretion of the on-site safety officer.
EXPLOSIVE GAS: (Other than Confined Space)			
Area.	>5%	Ventilate the area. Stop work activities.	At the discretion of the on-site safety officer.
CARBON MONOXIDE:			
Area.	12.5 ppm	Ventilate the area. Stop work until levels fall below action level.	At the discretion of the on-site safety officer.
PHOTOIONIZABLE GASES AND VAPORS (IP<10.2 V)			
Photoionizable substances (for undetermined air contaminants).	5 ppm (g)	Ventilation/appropriate respiratory and dermal protection.	When organic gases/vapors are suspected.
Photoionizable substances (for known air contaminants).	One half of the TLV or PEL or 10% of the PEL or TLV for carcinogens for the contaminant based on the relative response of the equipment. (g)	Ventilate. Don appropriate respiratory protection. Minimum upgrade is full-face piece APR.	When organic gases/vapors are suspected.

Table 5-1 Monitoring Program Summary (Continued)

HAZARD/SAMPLE TYPE	ACTION LEVEL (50% of either the current TLV or the PEL)	PRECAUTION IF ACTION LEVEL IS EXCEEDED	MONITORING FREQUENCY
NOISE:			
Area/Personnel.	85 dBA TWA.	Suitable hearing protection.	At discretion of the on-site safety officer.
	90 dBA.	Posting of area as noise hazard.	At discretion of the on-site safety officer.
HEAT STRESS:			
Oral temperature and heart rate monitoring ^(f) .	Oral temperature of 38°C (100.4°F) and/or a heart rate of 110 bpm.	Use of ice vests, reduction in work cycle duration, or other approved measures.	Monitoring frequency will be dependent on work area temperature and the discretion of the on-site safety officer.
AIRBORNE DUST:			
Work area.	1 mg/m ³ total instantaneous at work zone perimeters.	Improve effectiveness of dust control measures or upgrade to full-face piece APRs with HEPA cartridges.	At discretion of the on-site safety officer.
OTHER CONTAMINANTS:			
Any other toxic atmospheric contaminant that may be present based on available information.	One-half of the PEL or TLV for the contaminant or 20% for carcinogens, whichever is more stringent.	Upgrade to an appropriate respirator and dermal protection as determined by the on-site safety officer.	At the discretion of the on-site safety officer.

- (a) If action levels are exceeded, ventilation shall first be used to obtain acceptable conditions. If ventilation does not provide acceptable conditions, suitable protective clothing and respirators shall be worn for entry, in conjunction with ventilation.
- (b) In no case shall confined spaces be entered with an atmosphere exhibiting greater than 5% LEL.
- (c) Supplied air respirators (SARs) include full face-piece pressure demand self-contained breathing apparatus (SCBA) or full face-piece pressure demand airline respirators with escape SCBA.
- (d) DAC — Derived air concentration.
- (f) Monitoring will be performed when work area temperature exceeds 32°C (90°F), 29°C (85°F) when chemical protective clothing is required.
- (g) If photoionizable substances are detected above 5 ppm, colorimetric tubes shall be utilized to further identify the source. Benzene tubes will be pulled first followed by Chlorobenzene tubes.

5.1.8 Posting of Monitoring Results

Inquip shall review monitoring results with employees. Inquip shall notify and supply employees with the results of any exposure monitoring in accordance with any OSHA standard requiring such written notification.

6. GENERAL SAFETY

Inquip and Subcontractors are solely responsible for providing a safe workplace for their personnel who will be exposed to various hazards related to work at the area 2 site. These policies or rules and the Occupational Safety and Health Administration (OSHA) regulations must be strictly adhered to. Occasionally, site policies or rules can be modified to meet the needs of the chosen work method. OSHA regulations shall not be modified unless a formal variance is applied for and granted.

Where the provisions of the individual Subparts of Occupational Safety and Health Administration (OSHA) 29 CFR 1910 or 1926 require a "competent person", Inquip shall provide a qualified competent person meeting the specific requirements indicated in the Competent Person Checklist included in Appendix K.

6.1 Safety Reporting Requirements for Injury, Illness, and Property Damage

Injury, illness, and property damage reporting is taken very seriously by Inquip. Therefore, personnel are expected to comply with reporting requirements in an accurate and timely manner.

The on-site safety officer shall receive immediate notification of any occupational injury or illness to an employee. After proper notifications have been made, the on-site safety officer to ensure that required documentation is being completed shall use the Injury/Illness Checklist. Guide to Recordability of Cases Under the Occupational Safety and Health Act, provides guidelines for determining if the case is recordable under OSHA guidelines.

The on-site safety officer shall maintain a file for injury and illness documentation at the job site.

6.2 Tagging of Defective Tools, Materials, or Equipment

Defective tools, materials, and equipment shall not be used. The on-site safety officer shall take defective tools, materials and/or equipment out of service immediately by tagging, destroying, or removing them from the project. Personnel shall remove the tag only when the equipment has been properly repaired and is declared serviceable. Defective equipment tags shall be dated, sequentially numbered, and signed by the person tagging the equipment. Defective equipment tags shall also contain a description of the problem that requires the equipment, tools, or materials to be tagged. The Subcontractor shall maintain a defective equipment log. Standard tags shall be of nonreusable nylon fasteners to secure tags.

6.2.1 Equipment Caution Tagout

A caution tag is a warning device to identify operational equipment, systems and/or tools that require precaution or other items of information prior to operation. NOTE: Caution tags shall not be used for personnel protection (i.e., as a lockout/tagout).

6.3 Housekeeping

Inqup will strictly enforce housekeeping. All material, scrap, tools and toolboxes, and other equipment shall be stored in a neat and orderly fashion. Trash and scrap shall be removed from the work area on a regular basis (i.e., at least daily, before the end of each work shift) and shall never be allowed to accumulate, especially in walkways, under stairs, at the bases and landings of stairs and ladders, and near flammable substances.

6.4 Sanitation

6.4.1 General Requirements

Potable and nonpotable water containers and construction toilets shall comply with OSHA 29 CFR 1910.141 requirements. In addition to these requirements, single-use cup dispensers shall be provided adjacent to all potable water dispensers. Water shall not be dipped from containers. Water dispensers shall be clearly identified as drinking water. Drink stations shall only be installed in locations approved by the on-site safety officer. Rest areas shall be kept clean, and trash shall be removed from them daily. Trash receptacles shall be stationed in all eating areas and emptied regularly.

6.4.2 Requirements for Controlled Areas

For drink stations that are set up within the Controlled Areas of the site, personnel are required wash hands and face before receiving drinking water.

6.5 Illumination

Adequate illumination intensity shall be provided in all active work areas and accessways. Specified areas, outlined in the OSHA standard 29 CFR 1926.56 are included in Table 6-1. Working at night without proper illumination and at times when 5 ft candles cannot be achieved will not be permitted.

Table 6-1 Minimum Illumination Intensities in Foot-Candles

FOOT-CANDLES	AREA OR OPERATION
5	General construction area lighting.
3	General construction areas, concrete placement, excavation and waste areas, accessways, active storage areas, loading platforms, refueling, and field maintenance areas.
5	Indoors: warehouses, corridors, hallways, and exitways.
5	Tunnels, shafts, and general underground work areas: (Exception: minimum of 10 foot-candles is required at tunnel and shaft heading during drilling, mucking, and scaling. Bureau of Mines approved cap lights shall be acceptable for use in the tunnel heading.)
10	General construction plant and shops (e.g., batch plants, screening plants, mechanical and electrical equipment rooms, carpenter shops, rigging lofts and active storerooms, barracks or living quarters, locker or dressing rooms, mess halls, and indoor toilets and workrooms).
30	First aid stations, infirmaries, and offices.

6.6 Fall Protection

Inquip personnel shall utilize 100% fall protection practices. The term "100% fall protection" means the design and use of a fall protection system such that no exposure to an elevated fall hazard occurs. The OSHA fall protection standard will be strictly enforced. This standard requires, under certain conditions, that a fall protection plan be written, special training be conducted for each task, and several other additional requirements. This may require more than one fall protection system or a combination of prevention or protection measures. Section 6.6.3 provides definitions for the terminology used throughout this section. Fall protection is required in areas which include, but are not limited to:

- Any and all elevated work areas.
- Scaffolding.
- Power driven staging and platforms.
- Manbaskets.
- Roofs.
- Excavations.

A full body harness is required for elevated work above 6 ft. Safety belts will not be permitted. All fall protection equipment shall be inspected before use by the user and quarterly by a competent person.

Vertical lifelines may only be used in conjunction with a manufactured rope-grab system. Wire rope lifelines shall have a minimum of three wire rope clips. Cutting or burning around manila or nylon lifeline ropes is prohibited.

- Identify all fall hazards in the work area.

- Describe the method of fall arrest or fall restraint to be provided, including any drawings that may be deemed necessary.

6.6.1 Fall Restraint, Fall Arrest Systems

When employees are exposed to a potential fall hazard of 6 ft or more in height, Inquip shall ensure that fall restraint and/or fall arrest systems are provided, installed, and implemented according to the requirements in OSHA 29 CFR 1926 Subpart M, *Fall Protection*.

6.6.1.1 Fall Restraint

In general, all fall restraint protection shall be engineered out, if possible, by installing handrails or other types of passive systems. Fall arrest protection shall comply with the requirements of 29 CFR 1926.502, *Fall Protection Systems Criteria and Practices*.

6.7 Slip, Trip, and Fall Hazards

The construction site, especially roadways, access ways, aisles, stairways, scaffolds, and ladders, shall be kept clean and clear of hoses, extension cords, welding leads, and other obstructions, which may cause tripping, or other accident hazards. Slipping hazards such as grease, oil, water, ice, snow, or other liquids shall be cleaned up or eliminated on walkways, ladders, scaffolds, or other access ways or working areas. If slipping and/or tripping hazards cannot be completely eliminated, the area shall be barricaded and posted with applicable hazard postings.

6.8 Fire Protection and Prevention

Inquip shall take all necessary and appropriate precautions to prevent fires. Sufficient water and fire fighting equipment shall be available at all times to control fires as specified in Appendix H, and below. A 5-lb dry chemical fire extinguisher rated ABC must be located in all trailers as per National Fire Protection Association (NFPA) 10. A 20-lb fire extinguisher rated ABC must be provided within 75 ft, but no closer than 10 ft to all fueling operations and flammable storage areas. All vehicles transporting 50 gal or more of flammable or combustible liquids are required to carry 5-lb ABC fire extinguishers or larger units.

Access routes to fire extinguishers shall be kept clear at all times. All fire extinguishers shall be inspected monthly, annually, and every 6 years in accordance with the NFPA 10 standard on fire extinguisher inspections.

Open burning of trash and debris shall not be permitted. If there is a danger of accidental fire, a person shall be designated as fire watch and shall be dedicated solely to this effort during cutting/welding operations and shall continue this duty for 30 minutes after such operations are completed.

Flammable or combustible liquid storage shall comply with NFPA 30 and OSHA 1926.152. All gas cans shall be free of deformities and constructed of metal, with self-closing lids and flame arresters. Fuel cans shall be labeled as to their contents. Fuel cans shall not be transported in vehicle passenger enclosures (i.e., vans, truck cabs, inside vehicles, etc.). Fuel cans must be secured during transport. All equipment shall be fueled through funnels or spouts to prevent spills.

6.9 Fuel Storage Tanks

All stationary fuel storage tanks shall be equipped with a secondary containment device of compatible material that has the capacity to collect 100% of the contents of the largest tank.

Secondary containment structures for all fixed tanks and portable tanks containing 660 gallons or more should meet following criteria:

- Dikes shall not exceed 6 ft, unless the additional provisions of NFPA are considered.
- The outside base of the dikes must not be within 10 ft of any property line or greater as determined by the quantities identified in NFPA and OSHA, whichever is more stringent.
- Bottoms of dikes must have a minimum 1% slope away from the tanks contained therein.
- No loose combustible material, empty or full drum or barrel shall be permitted within the diked area.
- If two or more tanks are within a dike area they must be further subdivided by drainage channels or intermediated dikes with a minimum height of 18 in.
- Provisions for draining dikes, when provided, shall be accessible from the outside in the event of a fire, and be controlled in a manner to prevent discharge into natural water courses, public sewers, and public drains.

- Diked areas must provide for sufficient volume of the largest tank, and any additional volume of all other tanks within the common diked area at the level of the dike.
- Must include additional volume for freeboard to contain additional precipitation or be provided with a means of preventing the accumulation of precipitation.
- If precipitation does accumulate in the containment, the Subcontractor shall have this material pumped out from the containment in a timely manner. This will require coordination with the Contractor's Compliance Department and the use of the Discharge Disposition Form (DDF).

Portable tanks less than 660 gallons must meet the minimum following requirements:

- Surround the portable tank with a curb at least 6 in. high with provisions for draining accumulations of ground or rainwater or spills of liquids. Drains must terminate at a safe location and shall be accessible to operation under fire conditions.
- Grading surfaces in a manner to divert possible spills away from buildings or other exposures is not an option *Spill Prevention Control and Countermeasure (SPCC) Plan*.

Finally, where discrepancies exist between definition or fire protection requirements, resolution should be coordinated with the individual site needs and with individuals having jurisdiction in this area.

6.10 Waste Storage Tanks

Tanks containing hazardous waste as defined by 40 CFR 261 should be designed and managed according to 40 CFR 264 Subpart J. Tanks containing materials regulated under *Toxic Substance Control Act* (TSCA) should be properly marked and managed according to 40 CFR 761. TSCA storage containers must meet the requirements stated in 40 CFR 761.65(c)(6) and (7). Tanks that contain liquids that are not regulated under existing environmental regulations should be marked with a description of the contents.

6.11 Material Handling and Storage

All new material shall be stored on dunnage and secured as necessary to prevent blowing, falling, sliding, or collapsing. Debris and scrap material need not be stored on dunnage if the material is not to be moved with rigging and can be maintained in a stable manner.

Walkways and aisles shall be kept clear at all times, and laydown areas shall be neat and orderly. Material shall be stored on level ground, and the boundaries of laydown areas shall be identified. Material shall not be stored within 6 ft of hoistways or floor openings, or within 10 ft of roof edges. Poles, pipe, and other stock that may roll shall be wedged to prevent spreading and rolling.

Nails shall be removed from lumber that is to be reused. Nails in scrap lumber that will not be reused shall be bent back.

No material, tools, or equipment shall be leaned against other objects or walls unless they are secured from movement. Employees moving material by hand shall use proper lifting techniques and gloves. Safe working load limits shall be labeled on all temporary elevated floors or platforms and these limits shall not be exceeded.

6.12 Tools

All tools shall be kept in good condition and properly stored. Tools shall not be altered, and they shall be used only for their intended purposes and within manufacturer guidelines. Guards shall not be removed from tools, and all nip points, open drums, and fly wheels shall be guarded. All tools shall be inspected by the user before use with special attention given to power cords and the condition of teeth. If a power cord has been damaged, the tool shall be tagged defective in accordance with Section 6.2, and not used until a new power cord is installed.

Power tools shall be equipped with constant pressure switches that will shut the tool off when the switch is released. All power tools and electrical equipment shall be double insulated or be equipped with ground plugs.

Employees using powder-actuated tools shall be qualified and have on their person a card stating such. The loads for powder-actuated tools shall be kept in a locked red box labeled "EXPLOSIVES" which shall be kept in a locked area with restricted access.

All bench mounted and floor mounted tools shall be secured. Bench mounted grinders shall be set up and operated according to 29 CFR 1926.303. Tools equipped with handles shall have the handles installed. Cracked, splintered, or taped wooden handles shall be replaced. Cheater bars will not be permitted.

Impact tools shall be free of mushroomed heads and cracks. Work benches and sawhorses shall be provided when needed. All cords, hoses, and leads must be kept out of walkways. They must be strung seven ft or more over walkways or along the sides of walkways. Cords, hoses, and leads are not to be exposed to vehicle or equipment traffic unless protected. Cords, hoses, or leads must never be attached to the handrails of any type of manlift, scissorslift, or scaffold unless

breakaway attachment is used. They must never be supported by a conductive material or run through doorways, manways, or other wall or floor openings unless protected from damage. Any damage detected on cords, hoses, and leads will require removal from the project. Repairs are not permitted.

6.13 Torch/Plasma Arc Cutting, Welding, and Open Flame Requirements

Personnel shall identify the need to conduct cutting, burning, or open flame work. When the need has been identified, the on-site safety officer shall complete Section 1 of a Cutting/Welding/Open Flame Permit.

The term "open flame" designates flame produced by gas, arc welding, acetylene burning, blowtorches, or any other spark or flame-producing device. A permit is also required prior to the use of torpedo heaters.

At a minimum, fire prevention equipment shall consist of one 10 lb, dry chemical extinguisher rated ABC. A live water line meeting the requirements of OSHA 29 CFR 1926.150 or a water pump extinguisher may be used to supplement a dry chemical extinguisher. The work area shall be barricaded and posted; the equipment shall be inspected; exits shall be identified; emergency procedures shall be in place.

The approved permit shall be available for inspection and review in the immediate work area. Adjoining work areas shall be inspected and workers in the immediate vicinity shall be notified.

Upon completion of the above requirements and the precautionary items addressed in the permit, work may commence. The permit may be issued for more than 1 day.

Torch/plasma arc cutting or welding on galvanized steel, stainless steel, or nonferrous metals shall be performed using the PPE requirements in Section 4. In addition, engineering controls (local exhaust with HEPA filtration) shall be required to reduce exposure levels to below action levels identified in Section 5. Respiratory protection is necessary until monitoring indicates exposure levels below the action levels identified in Section 5.

Compressed gas cylinders shall be secured in an upright position at all times. Burning rigs shall be broken down at the end of each shift. Fuel gas hoses shall be stored in a ventilated area (never in gang boxes). Compressed fuel gas cylinders shall not be taken into confined spaces. All other rigs shall be stored in accordance with OSHA standards. Empty cylinders shall be removed at the end of each shift. Burning rigs shall be equipped with flashback arrestors at the torch end of each hose.

If there is the potential for accidental fire during burning or welding operations, a trained fire watch shall be established in accordance with OSHA and DOE requirements and continued until 30 minutes after the work has been completed. When there is possibility of injury during burning or welding operations, overhead burning signs and welding blinds shall be installed. A 10 lb dry chemical fire extinguisher rated ABC must be readily available to any welder or employee operating a burning or welding rig.

Welding leads, including lugs on the welder and lead connections, shall be fully insulated at all times. Damaged leads and dry-rotted fuel hoses shall be removed from service. Leads and hoses shall be protected from vehicle or equipment traffic.

6.14 Lockout/Tagout/Try of Energy Sources

Individuals or crews applying locks and or tags to isolate energy or potential energy shall prepare and enforce a LOTO plan for each point of operation or system being locked and/or tagged out. A lead, trade, or crew chief, will not be permitted to LOTO on behalf of the crew. Inquip requires a LOTO for each crew member. Where a lock or locking device cannot be installed, a tag only shall be used (one for each worker). However, additional cautions and barricades will be required.

6.15 Electrical

Work on energized circuits will not be permitted without approval from the on-site safety officer. Repairs to electrical equipment shall be performed by a qualified electrician only. The authorized employee must be a qualified person as defined in OSHA 1910 Subpart S, *Electrical*.

Ground fault circuit interrupters (GFCIs) shall be required at all times.

Lighting must be hooked to a GFCI unless the electrical connections are different from all other electrical hookups and cannot be mistakenly exchanged. All lights must be equipped with protective, nonconductive covers, and all light bulbs in light stringers must be shatterproof. Exposed, empty light sockets or broken bulbs are not permitted. Burned-out bulbs shall be replaced in a timely manner. Portable lighting used in wet or in other conductive locations shall be operated at 12 volts or less. However, 120 volt lighting may be used if it is hooked up to a GFCI.

Electrical installations must have on-site safety officer approval before being energized. Electrical installations in potentially hazardous locations must have approval prior to being installed. Electrical panels, boxes, etc., with open knockouts through which no service has been installed must be covered. All job trailers shall have a main service disconnect located at a readily accessible location outside and within 30 ft of the trailer, but not attached to the trailer.

Electrical cords and equipment shall not be hung or tied to steel or hung with wire unless a nonconductive material is used to insulate the cord from the metal. Plastic coated wire shall not be used to hang electrical cords. Cords that pass through doorways, holes, or are exposed to vehicle or equipment traffic shall be protected from damage. Flexible electrical cords shall not be spliced or have insulation repaired with tape. Replacement cord ends used for repair of flexible electrical cords shall be constructed of plastic or rubber and shall encapsulate all connections. Extension cords shall be made of #14 conductor or larger. Portable electrical equipment and extension cords used in highly conductive work locations (e.g., areas inundated with water or other conductive liquids) or in locations where employees are likely to have contact with water or conductive liquids, shall be approved for use in those locations. Employees shall not plug or unplug flexible electrical cords while their hands are wet or when standing in accumulated water or other conductive liquids.

All breaker boxes, electrical receptacles, and feed lines shall be labeled to identify the circuits they are feeding or are being fed from. All breaker boxes and disconnects shall be provided with unobstructed access 36 in. in front of the unit. All 480-volt lines shall be clearly labeled. When passing over or through walkways, electrical cords shall be strung at least seven ft above the walking surface.

Inquip shall comply with codes in the current NFPA, National Electric Codes (NEC), and 29 CFR 1926 Subpart K.

6.16 Ladders

All ladders shall be inspected before use and properly stored on dunnage or ladder racks. Tools and material shall not be left on the top platforms of unattended ladders, and material shall never be stored on ladders. All ladders shall be labeled with legible manufacturer instructions and warning labels. Ladders shall not be painted except for identification marks.

All ladders shall be type 1A and shall be wooden or have fiberglass siderails with metal rungs. The bases and landings of all ladders shall be kept clear of obstacles. Stepladders shall not be used as straight ladders, and extension ladders shall not be separated for use. All ladders shall be equipped with skid-resistant feet. If a ladder is used in a doorway, the doorway must be barricaded. Ladders shall not be used in lieu of elevated work platforms.

Employees shall never carry material when climbing ladders, nor shall tools or equipment be thrown to or from personnel on ladders. Handlines shall always be used to hoist material. Personnel shall not climb to the top step or top platform of any ladder. When in use, ladders shall be held or secured by tying off. Personnel working on ladders shall not straddle the ladder or overreach so that the body is no longer between the siderails.

Job-built ladders shall be inspected by a competent person and shall meet the OSHA standards contained in 29 CFR 1910 Subpart D, *Walking-Working Surfaces*. In addition, all job-built ladders shall have a furring strip attached over the filler block and rung.

6.17 Scaffolding

Inquip shall develop a scaffold erection, inspection, and tagging system for scaffolds and other elevated work platforms.

Scaffolding shall be erected and used according to the most stringent interpretation of the applicable safety regulations. Only heavy-duty (75-psf) scaffolds will be permitted. All scaffolding shall be erected, modified, used, moved, maintained, dismantled, and inspected under supervision of a competent person. The competent person must also ensure that scaffolds comply with the requirements of OSHA 29 CFR 1926.451 (Subpart L). All scaffolding shall be built as completely as possible. This means all decks must be complete (e.g., if handrails, midrails, and toeboards can be installed, they must be installed). An access ladder or a built-on scaffold ladder shall be used for personnel to reach their work areas. Personnel shall not climb on or use scaffold cross members or end buck supports for access.

All scaffolds shall be equipped with access gates. Climbing through hand rails shall not be permitted. If a chain or slide bar is used as a gate, a landing between the ladder and the gate shall be erected so that personnel can safely leave the ladder before unchaining the gate or moving the slide bar. A landing shall not be required if a self-closing gate is used. All scaffolds shall be equipped with handrails (if possible), regardless of the height of the scaffold. If personnel are required to work under or pass under a scaffold, the area between the guardrail and toeboard shall be screened with No. 18 gauge 1/2-in. mesh wire or equivalent.

Aluminum scaffold boards shall be used whenever possible. Scaffold boards shall not be notched, nailed, used as bearers, or used on the ground as walkways. All scaffold boards shall be cleated and tied with No. 9 gauge wire to prevent displacement. Scaffold boards shall be placed together tightly with a maximum space between the planking and toeboard of 1/4 in. Crawling boards and chicken ladders are prohibited.

Parts from scaffolds made by different manufacturers shall not be interchanged. Welded frame scaffolding shall not be repaired or altered. **Anti-sway bars shall be installed on all rolling scaffolds**; only welded frame scaffolds may be used as rolling scaffolds. Personnel shall not ride on rolling scaffolds.

- Fall protection and ladders shall be used whenever feasible during erection and dismantlement.

- Scaffolds shall be in complete compliance with all items on the Stationary Scaffold Inspection Checklist or Rolling Tower Inspection Checklist before and during use.
- If a scaffold is out of compliance, a competent person shall remove the signed Scaffold Approval Tag (Appendix A) and attach a Danger Tag (Appendix A).
- Scaffolds shall not be used until the Scaffold Approval Tag is signed, dated, and located at all access points to a scaffold by a Subcontractor competent person.
- Fall protection shall be used when scaffold height exceeds 6 ft unless scaffolds are complete with a full deck, toeboards, midrails, and handrails on all unprotected sides.
- Riding on scaffolds will not be permitted.
- If a deficiency is identified or a modification is required, the Subcontractor competent person shall remove all scaffold approval tags and replace with Danger Tags. These scaffolds shall not be used until an inspection has been completed by both Subcontractor and PMC competent persons.

6.18 Power-Driven Staging and Platforms

All equipment discussed in this section must be inspected by the on-site safety officer before initial use and by the employees prior to every use. In addition, a documented inspection by a competent person must be conducted quarterly.

The employees shall ensure that any hoses, cords, and leads are routed away from foot and vehicular traffic areas. Vehicular traffic is prohibited from running over exposed cords, hoses, and leads.

All operators of power-driven staging and platforms shall be trained in their use, and the training records shall be submitted to the Contractor. A copy of the owner's manual shall also be kept on each platform. All power-driven staging and platforms shall be properly placarded, and controls shall be clearly labeled.

Operators shall use a check sheet during pre-operational inspections and shall verify the inspection by signing the sheet. The Subcontractor shall keep these check sheets on file. All manufacturer's recommendations for inspections and operation shall be followed.

Handrails and complete midrails shall be kept in good repair. Secondary independent lifelines shall always be used on power staging, and all personnel shall be secured to it.

Power platforms shall not be used to hoist material nor shall personnel exit platforms except when the platform is on the ground. If welding or cutting operations are performed on a power platform, the loadlines and lifelines shall be protected.

All Subcontractor personnel who operate or use power-driven staging and platforms at area 2 shall be instructed on proper operation prior to use.

6.19 Manbaskets

Manbaskets shall not be used except when the total exposure of performing the task by another method would be more hazardous. The on-site safety officer will inspect manbaskets before initial use, and the employee will inspect them prior to each use. Test lifts and crane requirements will be strictly enforced.

A checklist shall be completed and signed during pre-lift meetings, and safety instructions shall be read by personnel entering the basket as well as by the crane operator.

All manbaskets shall be equipped with overhead protection. When cutting or welding is being done from a manbasket, the rigging shall be protected. During welding, a nonconductive link shall be installed on the load line. Only rigging that has never been used for any other purpose shall be used with the manbasket.

6.20 Signs, Barricades, Guardrails, Handrails, Covers, Stairs, Decks, and Ramps

All signs shall be properly colored and labeled as prescribed by OSHA standards. Signs shall be constructed of metal, fiberglass, or plastic and shall be promptly removed when no longer needed. Signs shall also be conspicuously placed in conjunction with barricades. No minimum spacing is required unless otherwise specified in 29 CFR.

The types of barricades permitted on the project include rope, tape, and hard barricades. The color of the barricades shall coincide with the OSHA color classifications. If hazard information is not printed on barricades at doorways, signs or tags shall be attached to the doorways. Construction fences are physical barriers.

Tape barricades shall be installed at a height of 42 in. and at a distance of 5 ft from the hazard. If a hazard is more than 10 ft high, the barricade shall be 1 ft farther away for each additional 5 ft of hazard height. Hard barricades may be adjacent to hazards unless the hazard is elevated. Hard barricades shall be 42 in. high, include midrails, and be capable of withstanding a 200-lb force in any direction. If work is taking place beneath a barricaded area, hard barricades shall be equipped with toeboards. If the area below is a walkway or passageway, the area between the barricade

midrail and toeboard shall be screened or blocked. All areas where there is a potential for falling objects shall be barricaded.

Turnbuckles shall be used when a barricade is constructed of wire rope.

Guardrails shall be erected whenever a walking surface changes elevation by more than 2 ft. Tape barricades may be used for this purpose, but such a barricade must be 5 ft from the change in elevation. All changes in elevation shall be marked with some kind of warning such as yellow and black tape or fluorescent orange paint. Handrails shall have smooth surfaces or be taped to prevent splinters. All wall openings shall be guarded. When a door opens onto a platform, the width of the door shall not reduce the effective width of the platform to less than 20 in.

Runs and risers on all stairs shall be constructed in accordance with OSHA regulations. Ramps shall have a maximum angle of 7°.

Stairs leading to office and warehouse trailers shall be firmly anchored and equipped with handrails. Risers, including the top and bottom steps, shall be of equal height.

Floor hole covers shall be labeled "WARNING - TEMPORARY HOLE COVER - DO NOT REMOVE OR STORE MATERIAL." Hole covers shall be cleated and constructed of 3/4-in. plywood with supports 18 in. on center or less.

6.21 Cranes

Before they may be used, all cranes shall be inspected by the on-site safety officer according to the Mobile Crane Safety Inspection Report that outlines requirements with respect to American National Standards Institute (ANSI) standards, and OSHA regulations.

Cranes that do not pass inspection will not be permitted to operate at the area 2 site until all faults are corrected. All cranes must have annual inspections by independent Contractors and must be accompanied by a signed copy of an Annual Inspection Checklist. Operators shall complete a pre-operation checklist before each shift. This checklist shall be maintained by the operator and made available upon request. The operator shall comply with the manufacturer's specifications and limitations on the operation of any crane. Rated load capacities, warnings, and other instructions shall be legible and conspicuously posted on all cranes. No modifications shall be made to a crane without written approval from the manufacturer.

All cranes shall be set up within 1° of level. Unless otherwise approved, all lifts shall be made on fully extended outriggers, and outrigger pads shall always be used. These pads shall be constructed of hardwood and sized three times larger in area than the float. The crane shall be

standing on a firm, uniform supporting surface with outriggers fully extended and tires raised free of the supporting surface. Picks off rubber shall be performed as specified by the manufacturer's load chart.

For pick and carry operations, the boom must be centered over the front of the crane with the swing brake locked or the mechanical swing lock engaged. Minimum boom point height shall be used and loads shall be carried close to ground surface. No on-tire operation shall be performed with the jib erected. Pick and carry operations shall be done according to manufacturer's recommended load charts and tire pressures.

All picks that exceed 75% of the capacity of a crane (the configuration and the chart rated capacity in that configuration), all tandem picks, and all picks adjacent to power lines or over critical process piping require critical lift plans. These plans shall, at a minimum, detail the load to be lifted, the maximum load radius and boom angle, the picking points, the capacity of the rigging, and the rigging configuration. All critical lifts must be approved by the on-site safety officer

The weights of all loads must be known, or a load-indicating device must be used. Only qualified operators shall operate cranes. Operators shall be provided with rigging and crane handbooks. All cranes shall be equipped with anti-two-blocking devices. All cranes equipped with outriggers shall be marked indicating full extension, and telescoping boom cranes shall have markings on the boom indicating the length of boom extended. Each crane shall have a 5 lb dry chemical fire extinguisher rated ABC.

All lattice boom cranes with structural damage to cords and/or lacings shall be immediately removed from service. All structural repairs to damaged booms shall be approved by the crane manufacturer and shall be performed in accordance with specifications and procedures prescribed by the crane manufacturer. Following all repairs to a boom, the crane shall be load tested prior to initial use. Test loads shall not exceed 110% of the rated load at any working radius. Testing shall be in accordance with SAE recommended practice, *Crane Load Stability Test Code J765* (April 1961).

Wire rope inspections shall be made and records shall be maintained by the operator and made available upon request.

Cranes shall be operated only by the following qualified/competent personnel: designated operators, trainees under the direct supervision of a qualified trainer, maintenance and test personnel when necessary in the performance of their duties, and crane qualified inspectors.

Crane operators shall be in visual or radio contact with a qualified flag person before and during every lift. If visual or radio contact is interrupted for any reason, the operator shall stop the lift until full contact is restored.

The crane shall be capable, within manufacturer specifications, of fulfilling all requirements of the work without endangering personnel or equipment.

The operator shall check the load line brake and the crane for stability when the load is only inches from the ground before proceeding with any lift.

The operator shall be responsible for the equipment and load during a lift or pick. The operator shall not attempt any lift which might compromise the safety of the operation. The operator shall ensure proper rigging techniques are used prior to lift. A suspended load shall never be left unattended. Cranes shall be operated smoothly, avoiding sudden stops and starts. The hoist line shall be vertical at all times. Personnel shall not stand or pass under suspended loads. Personnel shall not be allowed to ride the hook or load. The boom hoist drum pawl shall be engaged at all times except when lowering the boom. Operators shall ensure that all frequent and periodic inspections are current before operating the crane.

Safety latches on hooks shall be serviceable, and two pair of orange gloves shall be kept on each crane for use by flagmen.

An operator shall not leave the control station of a crane during a lift or pick except under the following conditions:

- When the load is lowered or raised to a safe landing area with no tension on the load line.
- After placing all brakes, pawls, switches, and clutches in a safe position.
- After turning the crane over to another qualified operator.
- After supporting the load by other means, such as cribbing, manufacturer sleds or frames, suspended rigging, or another crane.

Employees shall not get on or off a crane while it is in motion. Adjustments, repairs, or lubrication shall not be permitted on operating equipment unless it is required by manufacturer recommendations.

Tag lines shall be required on all loads. Use as many tag lines as necessary to adequately control the load during the lift and while landing.

Unless installed by the manufacturer, tool boxes, oil cans, choker racks, water coolers, or other items shall not be placed within the swing radius of the counterweight. The oiler shall stand clear

of the swing radius and assist the operator in keeping other employees outside the swing radius. The swing radius of the rotating counterweight shall be barricaded with a complete "no entry" barricade.

Crane load charts and the operator's manual for that particular crane configuration shall be located in the cab of each crane along with rated load capacities, recommended operation speeds, special hazard warnings, or instructions. Crane load chart capacities shall not be exceeded.

If a rental or Subcontractor crane is to be used and the load chart is 85% capacity, the chart shall be reduced to 75%. This is done by establishing 100% capability of the crane and reducing the capability by 25%. For hoisting of personnel, 50% maximum is allowed.

The superintendent of the crane operator shall ensure that the qualified operator is fit for duty. The superintendent shall check the area with the operator for any unusual conditions that could interfere with the lift or pick; shall conduct a safety briefing session concerning the lift or pick; shall tell the operator to stop the lift if there are any questions or concerns and contact the foreman immediately; shall check the mechanical and operating condition of the crane with the operator; shall assist the operator as needed for difficult or critical lifts; shall make sure the counterweight is barricaded; and shall coordinate the lift with the operator and the flagmen of the crew using the crane.

The foreman of the crew using the crane shall ensure that the area is checked for any unusual conditions and take action as needed to ensure a safe lift. The foreman shall give a lift safety briefing session to the crew and shall include the operator in lift instructions. One or more flagmen, who are specifically trained and qualified in accordance with hoisting, rigging, and operating procedures shall be assigned, as needed, to provide all signals to the crane operator and coordinate signals and other means of communication between multiple flagmen and the operator.

All riggers/signalmen shall be properly trained, qualified, and provided with a rigging handbook. They shall: clear the lift path prior to signaling the operator to start the lift and be present during the entire lift until replaced by another qualified flagman; be constantly aware of the location of the load in relation to line of travel and potential interferences; and watch for unauthorized personnel in the lift area or within the swing radius of the crane counterweight. No one shall be allowed to stand or pass under a suspended load. Flagmen shall assist the operator in checking for interferences within the swing radius of the counterweight; shall assist the operator in checking the boom location in relation to other interferences, obstructions, or power lines; and shall be in full view of the operator or in direct communication by radio or other approved sound-powered phones. Flagmen shall also give clear hand or voice directions, coordinate responsibility with other flagmen if more than one is needed for the lift, and stop the lift if any unusual condition or event occurs that could jeopardize the safe completion of the lift.

If there is an on-site crane related accident or incident, the equipment, rigging, and load are not to be moved (except for life saving activities) until after a investigation has been completed.

6.21.1 Crane Inspection

Applicable ANSI B30 series daily, monthly, quarterly, semiannual, annual, and special inspections shall be completed prior to operating any crane. All inspections shall be completed by a qualified inspector following manufacturer's recommendations and specifications.

Crane inspections shall include, at a minimum, all control mechanisms for maladjustment interfering with proper operation, excessive wear of components, and contamination by lubricants; all safety devices for malfunction; hydraulic, air, oil, and coolant systems for leaks; proper operation of electrical systems and condition of wiring; crane hooks for deformations or cracks; rope reeving in compliance with crane manufacturer's recommendations; and wire rope condition. Kinking, crushing, birdcaging, unstranding, corrosion, broken wires, broken strands, excessive wear, reduction of rope diameter, or improperly applied end connections are factors which determine whether further use of rope would constitute a safety hazard.

Completed daily, monthly, and annual inspection forms shall be available in a weather-proof container on the crane at all times. Copies of all completed forms shall be maintained for every crane.

6.21.2 Mast or Tower Crane

A special safety harness continuously attached to a lifeline shall be provided and used by all personnel climbing to the crane cab. Only one person shall be permitted in the cab of the mast crane.

Loads shall be lifted with the load line only. The boom shall be in a fixed position before raising the load line.

The operator shall shut down the crane if the wind velocity reaches the maximum recommended by the manufacturer, as measured by the anemometer mounted on the crane.

6.21.3 Movement of Cranes (Under Their Own Power)

The superintendent of the crane operator shall assign a qualified crew to the crane and ensure the proper operating and mechanical condition of the crane.

The superintendent shall ensure the proper loading and securing of the crane on the lowboy; provide a qualified flagman for signaling in close quarters, such as turns, gates, intersections,

congested areas, overtaking traffic, etc.; and ride as escort with the responsible supervisor in the escort vehicle immediately in front of the tractor, to assist the supervisor in observing for anticipated obstructions, interferences, and road problems.

The foreman of the electrical escort (where electrical escort is required) shall ensure that a fully qualified electrical lineman escort is assigned and shall fully instruct the assigned lineman as to his position in the caravan (number two directly behind patrol). His responsibilities include observing all potential electrical or overhead line interferences, relaying such information to the escort superintendent before questionable conditions become a problem, and "on foot" observation of the interferences at gates, congested turns, and other constricted areas.

A superintendent or safety supervisor shall be responsible for each crane movement and shall personally direct planning of the movement with consideration to routing, turns, speeds, stops, terrain, weather conditions, and traffic. The safety supervisor or superintendent shall inspect and approve the positioning and securing of the crane on the lowboy before movement begins; halt the movement operation if any question arises concerning safe movement of the crane; and ensure that proper permits are completed before going into Controlled Areas.

The foreman of the crane operator shall also ensure the proper operating and mechanical condition of the crane, know the hazards on the travel route, include in the safety briefing for the operator and flagman that one or more flagman shall escort the crane when en route over congested roads, and minimize the need for travel during heavy traffic periods. An escort vehicle equipped with yellow caution lights may be used when traveling long distances or when the boom or any of its attachments extends more than 20 ft in front of the crane. The foreman shall ensure that travel speed is commensurate with traffic and road conditions, that a qualified electrical lineman escort is available if the crane is to come within 20 ft of any power lines, and that all cranes are equipped with a horn signal system (i.e., one blast to move forward, two blasts to stop, and three blasts to back up).

The flagman shall be qualified and competent, maintain a position in full view of the operator and use proper hand signals, wear a high visibility vest and high visibility gloves, and watch for any unusual condition or event that could interfere with the safe movement of the crane.

The safety supervisor shall personally direct planning of the move; consider routing, turns, speeds, stops, terrain, and weather conditions; and ensure compliance with the plan for movement.

6.21.4 Critical Lifts

A critical lift plan shall be prepared by the superintendent of the crane operator for all critical lifts. The following minimum information shall be included:

- Reason for the necessity of the critical lift
- Type of crane
- Crane location
- Load location
- Boom angle
- Radius
- Weight of total load (weighing may be necessary)
- Dimensions of load
- Attachment points for rigging
- Obstructions in path of load
- Rigging hardware and configuration
- Crane operator qualifications
- Crane load chart (or copy thereof)
- Other equipment or cranes involved

The Contractor Hoisting and Rigging Committee shall approve all critical lifts. If any deviation from crane manufacturer recommendations is anticipated, approval shall be secured from the manufacturer and included for evaluation.

Critical lifts are lifts that require exceptional care because of size, weight (any lift with a total weight in excess of 75% of the capacity of the crane), close-tolerance installation, high susceptibility to damage, use of two cranes, or other unusual factors. An example of a critical lift is one in which a collision, upset, or drop could result in:

- An unacceptable delay to the schedule or another significant program impact due to damage.
- A significant release of radioactive material or other hazardous material.
- An unacceptable risk of injury or a significant adverse health impact.
- Undetectable damage that would jeopardize future operations or the safety of a facility.

6.21.5 Crane Work Near Overhead Power Lines

When planning crane placements, every effort shall be made to select locations that are least likely to allow any part of the crane or load to come within 15 ft of a power line by rotation, boom extension/elevation, or crane movement.

When frequent, repetitive crane work is to be performed near overhead power lines, consideration shall be given to having the lines relocated or de-energized.

When the job requires that a crane or the load come within 10 ft of an overhead power line, a written plan shall be prepared. All power lines shall be de-energized and grounded whenever possible.

The minimum clearance to any power line rated at 50 kV or below shall be 10 ft. For lines rated over 50 kV, minimum clearance shall be as required per OSHA 29 CFR 1926.550.

A written plan shall be developed to specify job details and special safety measures provided to ensure worker safety. The plan shall be approved by the on-site safety officer who shall review the measures taken to make the job safe (e.g., special tools, equipment, grounding). Written plans shall include unexpected situations (e.g., equipment drawing arcs, emergency responses, electrical shocks, the need to quickly de-energize the line), and instructions for handling them.

The following shall be considered before starting work within 10 ft of overhead energized power lines: allow daylight work only; allow no work on a rainy or foggy day; place a rubber blanket on the line; provide lineman's gloves and boots for operators and other exposed persons (riggers, etc.); provide rubber boots for operators; place rubber blanket on the operator's seat; insulate the crane boom; provide insulated tag lines; ground cranes per OSHA 29 CFR 1926.550; allow no one on a rig but the operator; post a special signalman to maintain line clearance; and provide detailed drawings and controls to ensure that equipment does not violate "minimum clearances."

Cranes and other heavy equipment shall not be operated within 3 ft of power poles or guy wires supporting these poles.

6.22 Rigging

6.22.1 General

All rigger's signalmen shall be properly trained and provided with a rigging handbook. Documentation of training shall be provided to the Contractor. Major rigging operations must

be planned and supervised by competent personnel to ensure that the best methods and most suitable equipment are employed.

The on-site safety officer shall have the authority to cancel hoisting and rigging operations based on consideration of weather, condition of lifting hardware, electrical line clearances, or any other factor, which in the judgement of the on-site safety officer may adversely affect the successful conclusion of the lift. All rigging must be protected from flame cutting and electric welding operations and from contact with solvents and chemicals.

6.22.2 Equipment Inspection and Testing

When special fabricated devices are required for hoisting and rigging operations (e.g., lifting beams, material baskets, and spreader beams), the design and calculations for the device shall be reviewed and approved by the on-site safety officer.

All rigging shall be inspected by a competent person before each use and marked as inspected at least annually. All rigging shall be clearly labeled with its capacity. All rigging shall be stored in a rigging loft or an equivalent area where it will not be exposed to the elements.

Hoisting and rigging equipment for material handling shall be visually inspected prior to use on each shift, and as necessary during its use to ensure that it is safe. Hoisting and rigging equipment shall be load tested at least annually by a competent person, who by training and experience, is capable of recognizing defects and taking the appropriate action to correct or eliminate them.

6.22.3 Safe Working Loads

Hoisting and rigging equipment shall not be loaded in excess of its recommended safe working load, as prescribed in Tables H-1 through H-20 of OSHA 29 CFR, 1926 Subpart H, (1926.251, *Rigging Equipment for Material Handling*). Special hoisting devices, slings, chokers, hooks, clamps, or other lifting accessories shall be marked to indicate the safe working loads and shall be proof-tested prior to initial use to 125% of their rated load.

The load weight must be determined before it is rigged. The gross load, which is the sum of the weight of the rigging, block, hooks, lifting beam, stowed or erected jibs, headache ball, other elements of rigging or equipment and the load, must be accounted for when determining hoisting equipment. Safe working loads of hoisting equipment apply only to freely suspended loads on plumb hoist lines. If hoist line is not plumb, additional side loads will compromise the stability and introduce stresses which exceed equipment designs. Rapid swinging of loads also adds additional stresses and minimizes stability. The load must always be directly below the boom point or upper load block.

The center of gravity must be below the hook and below the lowest point of attachment to ensure stability. Softeners must be used to protect slings at sharp corners. Sharp bends, pinching, and crushing should be avoided. The eye section of wire rope slings must not be bent around corners.

6.22.4 Wire Ropes

Wire ropes shall be kept in good repair and without deformities. Wire ropes with visual signs of kinking, crushing, unstranding, birdcaging, main strand displacement, core protrusion, loss of rope diameter, unevenness of outer strands, corrosion, heat damage, abrasion, broken wires or strands and cracked, worn, or deformed end attachments should be considered in evaluation of sling replacement. Wire rope shall not be used if in one rope lay there are 10 randomly distributed broken wires or five broken wires in one strand.

Tables H-3 through H-14 of OSHA 29 CFR 1926, Subpart H, (1926.251, *Rigging Equipment for Materials Handling*) shall be used to determine the safe working loads of various sizes and classifications of improved plow steel wire rope and wire rope slings with various types of terminals. For sizes, classifications, and grades not included in these tables, the safe working load recommended by the manufacturer for specific, identifiable products shall be followed, provided that a safety factor of not less than 5 is maintained. Wire rope with protruding ends of strands in splices on slings and bridles shall be covered or blunted. Wire rope application use limitations shall be in accordance with 29 CFR 1926.251(c)(4). When U-bolt wire rope clips are used to form eyes, Table H-20 of OSHA 29 CFR 1926, Subpart H, (1926.251, *Rigging Equipment for Materials Handling*) shall be used to determine the number and spacing of clips. A minimum of three clips shall always be used. More clips may be needed when large-dimension wire is used.

6.22.5 Slings

Synthetic slings shall be carefully maintained. Any synthetic sling with the red warning line exposed is to be removed from the WSSRAP immediately regardless of the extent of the exposure and the use of the sling.

Slings should not be dragged from beneath loads. Knotted and kinked slings will be considered permanently damaged and shall be removed from the site. When estimating sling capacity using multi-legged slings, only two of the legs shall be considered to carry the full load. All loose pieces of material shall be removed from the load prior to moving. Gloves shall be worn when handling wire rope. Hands shall be kept free from pinch points as slack is taken up. The load shall be controlled at all times. Personnel shall keep body parts out of pinch points. Tag lines shall be used.

Tables H-15 through H-18 of OSHA 29 CFR 1926, Subpart H, (1926.251, *Rigging Equipment for Materials Handling*), shall apply when using natural or synthetic fiber rope slings.

All splices in rope slings shall be made in accordance with fiber rope manufacturer's recommendations and 29 CFR 1926.251(d)(2).

Synthetic webbing (nylon, polyester, and polypropylene) shall be identified by the name of the manufacturer, the rated capacities for the type of hitch, and the type of material.

Synthetic web slings shall be immediately removed if there are signs of acid or caustic burns, melting or charring of any part of the sling surface, snags, punctures, tears or cuts, broken or worn stitches, distortion of fittings, discoloration or rotting, or red warning line showing.

6.22.6 Shackles, Hooks, and Bolts

Table H-19 of OSHA 29 CFR 1926, Subpart H, (1926.251, *Rigging Equipment for Materials Handling*) shall be used to determine the safe working loads of various sizes of shackles.

Only one-eye hooks shall be used, and hooking back to the load line will not be permitted in either mechanical rigging or hand rigging. Only one eye of a sling shall be used in a hook. A shackle shall be used to hold two or more eyes. The pin of the shackle should be placed in the hook with the eyes of chokers bearing on the shank.

Only shouldered eyebolts shall be used, except where it is not possible due to the configuration of the item to which the eyebolt is attached. Unshouldered eyebolts shall not be used when the load is to be lifted at an angle, because they are subjected to bending, and the load they can safely carry is severely reduced. Eyebolts should never be welded. Shouldered eyebolts must be installed with the shoulder at a right angle to the axis of the hole and must contact the working surface to keep bending to a minimum; the loads should be applied to the plane of the eye. The tapped hole for screwed eyebolts shall have a minimum depth of one and one-half times the bolt diameter. The point of a hook must never be inserted in an eyebolt; a shackle must be used instead.

The manufacturer's recommendations shall be followed in determining the safe working loads of the various sizes and types of specific and identifiable hooks.

Shackles and hooks shall be constructed of forged alloy steel with the identifiable load rating and manufacturer on the shackle or hook. All hooks except for sorting hooks and sliding choker hooks shall be equipped with a safety latch.

6.22.7 Knots

Knots shall not be tied in rigging for any purpose, and all rigging shall be used only for its intended purpose. Rigging used to hoist man baskets shall be identified as such and not used for any other purpose.

6.22.8 Weather Conditions

No rigging or hoisting operation shall be carried out when weather conditions could cause the operation to be hazardous to personnel or property. The size and shape of loads must be examined to determine if a hazard exists during high winds. Wind loading may not exceed equipment capacity. When wind speeds reach 25 to 30 mph, or when visibility is impaired by darkness, snow, fog, or rain, the operation shall be suspended.

When the temperature is below freezing, caution must be used to ensure that no part of the hoisting equipment is shock loaded, as steel fracture can result. Stress factors that reduce rigging capacity and safe working load must be considered when using slings at angles or when slings are choked.

6.22.9 Incident Reporting

Any incident occurring during hoisting/rigging activities that may affect personal safety or the operational safety of equipment shall be reported immediately to the on-site safety officer.

6.23 Motor Vehicles and Heavy Equipment

Drivers and/or operators of vehicles and heavy equipment must have the appropriate State license certifying their qualifications to drive or operate each piece of equipment or vehicle. When State certification is not available for a piece of heavy equipment evidence of operator qualification for each operator, listing each piece of heavy equipment that operator is qualified to operate must be available.

Inquip shall be responsible for the safe operation of all vehicles and heavy equipment operated by Inquip personnel. Drivers and/or operators of vehicles and heavy equipment shall use caution when operating in close proximity to other equipment and tools (e.g., vehicles, heavy equipment, scaffolding, hoses, cords, etc.).

Drivers shall be responsible for the safety of all passengers and the stability of materials being hauled. Personnel shall not mount or dismount moving vehicles. Personnel shall not ride in the bed of any vehicle. Vehicles used to transport employees shall have seats firmly secured and adequate for the number of employees to be carried. The use of seat belts shall be mandatory when operating or riding in vehicles.

Rubber-tired unattended vehicles and heavy equipment shall not be left running unless the wheels are chocked and the parking brake set.

All blades and buckets shall be lowered when the operator leaves the cab unless physically locked or properly blocked. Workers may not work under or between machinery, equipment, or parts of machinery or equipment until the material is physically blocked or otherwise supported.

Heavy equipment shall be maintained in proper operating condition at all times. All machines shall be equipped with Roll-Over Protective Structure (ROPS) cabs as identified by 29 CFR 1926.1000. Operators shall be trained in the proper method of working on slopes.

All heavy equipment with ROPS cabs shall be labeled as required by 29 CFR 1926.1000. Seat belts shall be installed and used in all equipment with ROPS attachments except for compactors and rubber-tired skid steer equipment. All heavy equipment shall be equipped with functioning back-up alarm systems that are clearly audible above surrounding noise.

All equipment and tools shall be subject to a safety inspection conducted by the on-site safety officer, upon arrival at the site, prior to being placed into service. Operators shall perform daily inspections of machinery and equipment. Records of these inspections shall be made and kept by the Subcontractor. These records shall be available upon request. Defective equipment that could potentially endanger personnel or the environment shall be tagged defective, and immediately repaired or removed from service. All machinery shall be subject to inspection by the Safety Department. Operators/owner's manuals must be available for review upon request. The owner's manual will be strictly adhered to. All operators shall review and understand the operator's manual. Equipment may not run over hoses, manhole covers, debris, or any other material. Caution must be used in operating equipment around scaffolding and other elevated platforms. If the task requires equipment to operate around elevated platforms, a "Safe Zone" must be designated around the elevated platform using tape barricade or other type of warning system.

Oils or other fluids (except water) that leak onto the ground shall be cleaned up and the contaminated soil shall be disposed of in accordance with Section 11 of this plan.

All equipment is designed for a particular function and shall be operated according to the manufacturer's recommendations and within the manufacturer's limitations.

All tire servicing, including inflation, shall be done in compliance with 29 CFR 1910.177 and 29 CFR 1926.600.

6.24 Underground Utilities and Communication Lines

Before any ground penetration or excavation can begin, an excavation permit is required. See Section 6.25 subsection for additional information. The drawings and as-builts for the area shall be reviewed for underground utilities. The owner of the underground utility or any other adjacent utility must be notified. Underground utilities within 5 ft of excavation boundaries shall be marked by flagging or staking every 20 ft. When known, the depth of the utilities should be indicated. Any excavation being performed 5 ft or closer to an underground utility shall be done by hand until the utility is positively located. Once the utility is positively located and the on-site safety officer has given approval, the remaining excavation can be performed by mechanical equipment. Personnel shall comply with the Lockout/Tagout/Try requirements identified above when danger from energized underground utilities is present or any taps or line breaks are anticipated.

6.25 Excavations

The OSHA (29 CFR 1926, Subpart P, *Excavations*) standards are very specific with respect to excavations. The term "excavation" applies to any excavation whether by equipment or by hand. The permit system will assist in regulating excavation methods that could cause a personnel safety hazard, damage to a buried or unburied utility or other item, or that could cause a spill.

A competent person must be present at an excavation greater than 4 ft in depth at all times while personnel are working in it or when the excavation is deemed critical. Spoil must not be less than 3 ft from the excavation, and the excavation must be barricaded at all times. The Subcontractor must maintain a record of excavation inspections, including reinspection of excavations after weather changes and extended absence from the excavation.

Access to excavations must be via secured ladders that extend 36 in. above the excavation, have adequate landings at the top and base, and are located within 25 ft of personnel.

If a professional engineer is required to design shoring systems, he or she shall be registered in the State of Illinois.

Fall protection shall be required for excavations with slopes steeper than 1:1 or 45° and depths 6 ft and greater. Standard guard rails or shoring that extends 42 in. above the ground level can serve as fall restraint. When fall arrest systems such as anchored rope or cable systems are used they should be capable of supporting 5,000 lbs for each person and shall be rigged to allow the movement of employees only as far as the excavations edge.

6.26 Clearing and Grubbing

Personnel shall be trained in the proper method of felling, limbing, and bucking logs. This includes such matters as looking for dead limbs before felling trees, making proper cuts to ensure the trees fall in the area intended, positioning to avoid being exposed to falling or rolling trees, making sure that branches are not spring loaded, and handling chain saws to prevent binding.

Heavy equipment used for clearing and grubbing must be equipped with cabs to protect operators from falling or flying objects. The appropriate personal protective equipment (PPE), as specified in Section 4, must be worn in all clearing and grubbing operations

6.27 Electrical Transmission Lines

Any overhead wire shall be considered to be an energized line unless the person owning such line or the electrical utility authorities indicate that it is not an energized line and it has been visibly grounded.

All parts of cranes, excavators, lift trucks, trucks with dump bodies, or other lifting equipment working in the area of energized overhead electrical lines shall maintain a minimum clearance of 10 ft from such lines. A person shall be designated to observe equipment clearance and give timely warning of all operations where it is difficult for the operator to maintain the desired clearance by visual means.

6.28 Concrete Placement

Persons who place concrete shall be trained in the chemical hazards associated with handling concrete, a mild corrosive. Inquip shall maintain sufficient quantities of clean water nearby the work area for workers to wash concrete from their skin and eyes. Safety glasses shall be worn during concrete placement.

All protruding reinforcing steel, onto and into which employees could fall, shall be guarded to eliminate the hazard of impalement.

Concrete pumping systems shall be provided with positive fail-safe joint connections with all pins and latches in place to prevent separation when pressurized.

Powered and rotating type concrete troweling machines that are manually guided shall be equipped with a control switch that will automatically shut off the power whenever the operator's hands are removed from the equipment handles.

Bull float handles, used where they may contact energized electrical conductors, shall be constructed of nonconductive material or shall be insulated with a nonconductive sheath which has electrical and mechanical characteristics which would provide the equivalent protection of a handle constructed of nonconductive material.

6.29 Nuclear Soil Density/Moisture Testing

The use of a nuclear soil density/moisture meter will be allowed after the Subcontractor submits evidence of the following:

- The Subcontractor shall supply copies of all licensing and operator certification regarding use of the nuclear density/moisture meter.
- Meters shall not be left unattended when removed from storage.
- The source shall be tested for leakage and/or contamination at intervals not to exceed applicable the conditions under the U.S. Nuclear Regulatory Commission (NRC) materials license.
- Radiation dosimetry for personnel operating such equipment (where required) shall be the responsibility of the Subcontractor, in accordance with the provisions of the applicable NRC license and regulations.

7. MEDICAL SURVEILLANCE PROGRAM

7.1 General Medical Surveillance Program for Personnel Working at the Area 2 Site

7.1.1 Respirator Medical Monitoring Requirements

Any Subcontractor employees wearing respirators during the course of the contract shall participate in a medical surveillance program which meets the requirements of 29 CFR 1910.134, *Respiratory Protection*. This requires an examination prior to being issued a respirator and at least annually thereafter. The medical examination report shall be signed by an American Board of Preventive Medicine (or equivalent) certified occupational physician and shall include a written opinion that the employee is medically qualified to wear respiratory protection and other personal protective equipment. The report shall also include a description of any recommended work limitations placed on the employee as a result of medical conditions detected from the examination. A copy of the required Medical Evaluation Report Form is provided in Appendix F.

Frequency: Examinations shall be provided more frequently under the following circumstances:

- If determined necessary by the examining physician.
- If an employee is injured or becomes ill, or develops signs or symptoms possibly due to an overexposure.
- As soon as possible following an emergency incident.

All medical examination reports shall be signed by an American Board of Preventive Medicine certified occupational physician.

7.1.2 Audiometric Testing

Any employees who may be exposed to noise levels at or above 85 dBA 8-hour time weighted average, without regard to hearing protection devices, are required to participate in an audiometric testing program.

7.1.3 Additional OSHA Specific Medical Monitoring Requirements

As may be applicable to a particular work activity, Inquip will provide and adhere to the medical monitoring requirements specified in Occupational Safety and Health Administration (OSHA) 29 CFR 1910 *Subpart Z Toxic and Hazardous Substances* and OSHA 29 CFR 1926. It has been necessary to institute medical monitoring programs for torch cutting where cadmium and/or lead

exposure levels may exist. There may be additional work practices that require implementation of the above referenced medical monitoring requirements.

7.2 Medical Surveillance Program for Personnel Working in Controlled Areas

In addition to the medical surveillance requirements identified in Section 7.1 above, Inquipp personnel working in Controlled Areas shall participate in the following medical surveillance program, where applicable.

7.2.1 Medical Surveillance Program for Hazardous Waste Workers

Subcontractor employees with 29 CFR 1910.120 40-hour training for hazardous waste site workers, and (HAZMAT) team members and/or hazardous materials specialists whose job involves the use of respiratory protection shall participate in a medical surveillance program which meets the requirements of 29 CFR 1910.120 (f) for hazardous waste work. This requires a comprehensive physical examination be performed prior to assignment, at least annually thereafter, and upon termination of employment. Medical examinations shall, at a minimum, consist of those components listed in Appendix G. An American Board of Preventive Medicine certified occupational physician shall include a written opinion of an employee's medical fitness to wear respiratory protection and other personal protective equipment.

All reports shall also include a description of any recommended work limitations placed on the employee as a result of medical conditions detected from medical examinations. A copy of the required Medical Evaluation Report Form is provided in Appendix F.

Frequency: Examinations shall be provided more frequently under the following circumstances:

- If determined necessary by the examining physician.
- If an employee is injured or becomes ill, or develops signs or symptoms possibly due to an overexposure.
- As soon as possible following an emergency incident.

All medical examination reports shall be signed by an American Board of Preventive Medicine certified occupational physician.

Site workers who receive 24-hour training under 29 CFR 1910.120(e) are not authorized to wear respirators and are therefore not required to participate in a medical surveillance program. However, should this status change, i.e., the worker is upgraded to 40-hour training, as would be

necessary to wear respiratory protection, then all the requirements specified above would become applicable.

8. TRAINING AND QUALIFICATIONS

The following training requirements shall apply to Inquip personnel, including lower-tier Subcontractors, performing work at the Area 2 Site. Unless otherwise specified, training shall be the responsibility of Inquip.

8.1 General Training Requirements for Personnel Working at the Area 2 Site

8.1.1 General Employee Training

Prior to working at the Area 2 Site, all employees shall attend a site-specific safety and health orientation provided by the on-site safety officer.

The only exception to this requirement shall be for temporary visitors, delivery personnel, and lower-tier Subcontractor personnel on site in Uncontrolled Areas only for less than 8 hours per week, when under direct Inquip oversight.

8.1.2 Respirator Training and Fit-Testing

Where the Inquip is required to provide respirators, training, and fit-testing, it is Inquips responsibility to fit-test and train each employee who wears a tight fitting respirator in accordance with Inquip's respiratory protection program. The procedures for quantitative fit-testing and training outlined in the Respiratory Protection Program shall be at least as stringent as those outlined in American National Standards Institute (ANSI) Z88.2-1992 and governing Occupational Safety and Health Administration (OSHA) (e.g., 29 CFR 1910.134) standards. Respirator training shall instruct individuals as to when to leave the work area if they experience respirator failure, and when they should remove a respirator to avoid a life-threatening situation. Inquip shall maintain written evidence that each employee has received proper respirator training and fit-testing in accordance with 29 CFR 1910.134.

8.1.3 Task-Specific Safety Briefing

All Subcontractor personnel performing work on site shall receive on-the-job, task-specific hazard recognition and safety training.

8.1.4 Hazard Communication Program

All personnel exposed to materials shall be trained in the use of the materials, the personal protective equipment (PPE) required, and the emergency procedures associated with the materials they will be expected to use. All personnel shall be trained and shall know the location of their

company's written Hazard Communication Program and have access to the Material Safety Data Sheets (MSDS) for all materials to which they may be exposed. To check the effectiveness of the Subcontractor Hazard Communication Program, the Contractor will conduct periodic inspections and will ask Subcontractor employees' questions about the materials they are handling.

8.1.5 Hearing Conservation Program

Employees shall have received appropriate hearing conservation training as specified in 29 CFR 1910.95. Training shall include, at a minimum, a description of the effects of noise on hearing, and the purposes, advantages, disadvantages, and attenuation of various types of hearing protective devices (HPDs). Instructions should also include selection, fitting, use, and care of HPDs. Finally, training shall address the purpose of audiometric testing and an explanation of the test procedures.

8.1.6 Supervisor Qualifications

The Subcontractor shall submit the names and qualifications of on-site supervisory personnel, including alternates, having overall responsibility for employee safety and health.

8.1.7 Permit Required Confined Space Entry Training

Inquip shall have employees who are trained according to their responsibilities outlined in OSHA 29 CFR 1910.146 whenever entry into confined spaces is to be performed. Any employees designated as emergency rescue personnel must have cardiovascular pulmonary resuscitation (CPR) and first-aid training. These certifications must be current. In addition, rescue personnel must have annual training in rescue operation simulation in actual confined space conditions.

8.1.8 Excavation Awareness Training for Excavations

Inquip shall have employees designated as competent persons, where applicable, for the purpose of determining the safety and stability of excavations. In addition, special training and/or experience which qualifies each individual as a competent person shall be documented and submitted to the Contractor upon request.

8.1.9 Lockout Tagout Training

Inquip shall have employees capable of working in areas with energy sources regardless of the type of work who are trained in the Lockout Tagout Program.

8.2 Additional Training Requirements for Personnel Working in Controlled Areas

Except as otherwise specified herein, the following training requirements are applicable to all Inquip and lower-tier Subcontractor personnel working inside Controlled Areas and are in addition to the training requirements identified in Section 8.1.

8.2.1 Hazardous Waste Operations Site Worker Training Requirements

Hazardous Waste Operations and Emergency Response Standard (HAZWOPER) training programs shall meet the requirements of 29 CFR 1910.120(e).

Training certificates or equivalent documentation certifying completion of training, per the above referenced OSHA standard, shall be maintained for review and acceptance prior to the start of on-site work. Documentation of actual field experience must be submitted prior to unsupervised work. This includes copies of certificates for initial training and annual refresher training.

Outside restricted areas, hands-on work does not include activities such as off-loading equipment, repairing equipment, performing job-site inspections, or advising on the use of a manufacturer's product. Delivery personnel who remain in nonrestricted areas are not considered hands-on workers.

8.2.1.1 Hazardous Waste Operations Site Worker 24-Hour Training Requirements

Each employee who will enter a restricted area (whether in a vehicle or not) or who will perform any hands-on work in a Controlled Area, and who is not required to wear respiratory protection, shall receive training in accordance with the 29 CFR 1910.120(e) the OSHA *Hazardous Waste Operations and Emergency Response Standard* (HAZWOPER). This standard requires a 24-hour training course and a minimum of 1 day of actual documented field experience under the supervision of a trained supervisor. An additional 8 hours of training beyond the HAZWOPER is required for field supervisors and managers responsible for field operations.

Eight hours of HAZWOPER refresher training are required annually for all applicable personnel.

8.2.1.2 Hazardous Waste Operations Site Worker 40-Hour Training Requirements

Each employee who will enter a restricted area (whether in a vehicle or not) or perform any hands-on work in a Controlled Area (where the potential for exposure exists) and who is required to wear respiratory protection shall, at a minimum, have completed a 40-hour training course and a minimum of 3 days of actual field experience in accordance with 29 CFR 1910.120(e).

An additional 8 hours of training beyond the HAZWOPER is required for field supervisors and managers responsible for field operation.

8.2.2 Site Visitor Requirements

Personnel (visitors) who will not perform hands-on work in Controlled Areas will not be required to complete HAZWOPER training. Visitors are required to remain outside restricted areas, to be escorted 100% of the time when in Controlled Areas, and to read and sign a visitor site-orientation form.

8.2.3 Torch/Plasma Arc Cutting, Welding, and Open Flame Training

Personnel exposed to welding, torch/plasma arc cutting, and open flame work will be trained and documented in the use of, and understand the reasons for, protective clothing and equipment.

9. SITE CONTROL

9.1 Access Control

Access to the work site will be controlled by the owners representative at all times during the course of the project.

9.2 Buddy System

In general, work in Controlled Areas should be performed by crews of at least two persons (the "buddy system") where there is potential for injury, illness, or emergency conditions, based on the nature of work. On occasions where there is minimal potential for such conditions, an individual may work alone subject to the on-site safety officer approval.

9.3 Prohibited Items

The introduction of certain controlled commodities is prohibited throughout the Area 2 Site. Prohibited items include firearms, archery equipment, alcoholic beverages, narcotics, and explosives. Cameras are authorized subject to Solutia approval. All personnel and vehicles entering and leaving the project are subject to property checks. Also, beverage and food containers (including empty containers) shall not be permitted in Controlled Areas.

10. WORK ZONE EXIT REQUIREMENTS, DECONTAMINATION, AND CLEANING

10.1 Uncontrolled Area Work Zone Exit Requirements

When the work zone is in the Uncontrolled Area, all vehicles, heavy equipment, and tools being removed from the work zone shall be free of gross debris, dirt, and mud.

10.2 Controlled Area Work Zone Exit and Contamination Control Requirements

10.2.1 Work Zone Exit Requirements When Showers Are Not Required

When shower facilities are not required, but there is potential for contamination of equipment and personnel, Inquip shall establish an area for decontamination at the exit from the work zone. The purpose is to remove gross contamination from personnel and equipment prior to exit from the work zone and to minimize the spread of contamination outside the work zone. The area shall include the following materials:

- An equipment drop or storage area for storing reusable PPE and equipment that does not need to be removed from the work zone.
- A boot wash station with brushes.
- Containers for disposable clothing (either bags or barrels).
- Chairs or benches for personnel to use while doffing PPE.
- PPE doffing protocol posting as needed.

Responsibility for providing the above equipment shall be as described in the HASP checklist.

All PPE (i.e., coveralls, gloves, and boots) shall be washed, or removed as appropriate, in the CRZ to remove gross contamination that may have adhered to them

10.2.2 Additional Requirements for PCBs

When the employee contacts materials that are potentially contaminated with PCBs, the employee shall comply with the decontamination requirements stated below.

A decontamination area shall be established at the perimeter of each PCB work area for decontamination and/or disposal of items potentially contaminated with PCBs. Decontamination

areas shall be lined with non-slip polyethylene sheeting (or approved alternate) to reduce the potential for spread of contamination outside the work area.

Prior to removal from decontamination area, equipment/materials shall be decontaminated by flushing/rinsing all PCB contaminated surfaces with diesel fuel or other approved solvent. This diesel fuel may be used or reused for decontamination until it contains 50 ppm PCBs. All non-porous items (i.e., hand tools, movable equipment, etc.) shall be rinsed with diesel fuel. All liquids generated shall be properly containerized in a 1A1 DOT approved container. All personnel conducting decontamination activities shall take measures so that no diesel fuel, dust or particulate emissions containing PCBs are released from the decontamination area. Disposable items, and equipment with permeable surfaces (such as wood or fabric) shall be placed in PCB waste containers. Granular absorbent clay (or equivalent) shall be placed in a 1A2 DOE approved container to absorb any free liquids before they are sealed and transported.

10.2.3 Equipment Decontamination Requirements Applicable at Work Zone Exits

All vehicles, heavy equipment, tools, and equipment being removed from the work zone shall be free of gross debris, dirt, and mud. Equipment and tools shall be cleaned within the confines of the work zones.

10.2.4 Temporary Restroom Facilities in Controlled Areas

Where required to provide temporary restroom facilities, the restroom shall be located at the exit point from the work zone. The restrooms shall be maintained in a clean and sanitary condition at all times. Visual inspections of the facilities may be conducted to ensure clean and sanitary conditions.

10.2.5 Personal Protective Clothing Segregation and Disposal Requirements

Upon removal of outer PPE, inner clothing shall be inspected for dirt and debris.

Subcontractor shall segregate and dispose of PPE in accordance with the following:

- Where applicable, any PPE exposed to contaminants above the specific OSHA standards (e.g., lead, cadmium) shall be labeled and packaged in accordance with applicable OSHA standards.

10.3 Controlled Area Exit Requirements

10.3.1 Personnel

Except as provided below, all personnel exiting a Contamination Area shall survey themselves for contamination. In the event contamination is found on the person's skin or clothing, one or more of the decontamination methods shown in Table 10-1 may be implemented before the individual is permitted to leave the area. When contamination is detected, the individual shall:

1. Remain at the exit point.
2. Notify the on-site safety officer.

The on-site safety officer will then:

1. Resurvey all contaminated areas.
2. Direct decontamination in accordance with required procedures and the methods described in Table 10-1. The individual will be resurveyed after each decontamination attempt.
3. Each step or method described in Table 10-1 will be repeated at least one time before the next sequential method is tried.

Table 10-1 Personnel Decontamination Methods

PERSONNEL DECONTAMINATION						
STEP	METHOD	SURFACE	ACTION	TECHNIQUE	ADVANTAGES	DISADVANTAGES
1&2	1. Wet wipes 2. Soap and water	Skin and hands	Emulsifies and dissolves contaminant	Wash and monitor. Do not wash more than 3-4 times.	Readily available and effective for most contamination.	Continued washing will defat the skin. Indiscriminate washing of other than affected parts may spread contamination. Never allow contamination to flow into eyes, ears, nose or mouth.
3	Lava soap, soft brush and water	Skin and hands	Emulsifies, dissolves, and erodes	Use light pressure with heavy lather. Wash for 2 minutes, three times. Rinse and monitor. Use care not to scratch or erode skin. Apply lanolin or hand cream to prevent chapping.	Readily available and effective for most contamination.	Continued washing will abrade the skin.
4	Laundry detergent (plain)	Skin and hands	Emulsifies, dissolves, and erodes	Make into a paste. Use with additional water with a mild scrubbing action. Use care not to erode the skin.	Slightly more effective than washing with soap.	Will defat and abrade skin and must be used with care.
5	Soap and water	Hair	Emulsifies and dissolves contaminant	Shampoo hair <u>in sink</u> (not shower) and dry. If contamination is not lowered to acceptable level, cut off contaminated hair area(s).	Readily available and effective.	

Table 10-1 Personnel Decontamination Methods (Continued)

PERSONNEL DECONTAMINATION						
STEP	METHOD	SURFACE	ACTION	TECHNIQUE	ADVANTAGES	DISADVANTAGES
6	Flushing	Eyes, ears, nose and mouth	Physical removal by flushing	Roll back the eyelid as far as possible, flush with large amounts of water. If isotonic irritants are available, apply to eye continually and then flush with large amounts of water. (Isotonic irritant [0.9% NaCl solution]: 9 grams NaCl in beaker, fill to 1000cc with water). Can be purchased from drug suppliers, etc. Further decontamination must be done under medical supervision.	If used immediately will remove contamination. May also be used for ears, nose, and throat.	When using for nose and mouth, contaminated individual should be warned not to swallow the rinses.
1	Flushing	Wounds	Physical removal by flushing	Wash wound with large amounts of water and spread edges <u>gently</u> to stimulate bleeding, if not profuse. Further decontamination must be done under medical supervision.	Quick and efficient if wound is not severe.	May spread contamination to other areas of the body if it is not done carefully.

10.3.2 Equipment

All vehicles, heavy equipment, tools, and equipment being removed from a Contamination Area shall be surveyed for contamination and will not be released to uncontrolled areas until it meets release criteria. The employee shall be responsible for washing his equipment and tools. Such equipment may be cleaned at the site decontamination pad by personnel. Additional methods of equipment decontamination are listed from least to most intensive in Table 10-2.

Table 10-2 Area and Material Decontamination Methods

METHOD	SURFACE	ACTION	TECHNIQUE	ADVANTAGES	DISADVANTAGES
METHOD 1 Vacuum cleaning	Dry surfaces	Removes contaminated dust by suction.	Use conventional vacuum technique with HEPA filter.	Good on dry, porous surfaces. Avoids water reactions.	All dust must be filtered out of exhaust. Machine is contaminated.
METHOD 2 Water	All nonporous surfaces (metal, painted, plastic, etc.)	Dissolves and erodes.	For large surfaces: Hose with high-pressure water at an optimum distance of 15 ft to 20 ft. Spray vertical surfaces at an angle of incidence of 30° to 40°; work from top to bottom to avoid recontamination. Work upwind to avoid spray. Determine cleaning rate experimentally if possible; otherwise, use a rate of 4 sq ft per minute.	All water equipment may be utilized. Allows operation to be carried out from a distance. Contamination may be reduced by 50%. Water equipment may be used for solutions of other decontaminating agents.	Drainage must be controlled. Not suitable for porous materials. Oiled surfaces cannot be decontaminated. Not applicable on dry contaminated surfaces (use vacuum); not applicable on porous surfaces such as wood, concrete, canvas, etc. Spray will be contaminated.
	All surfaces	Dissolves and erodes.	For small surfaces: Blot up liquid and hand wipe with water and appropriate commercial detergent.	Extremely effective if done immediately after spill and on nonporous surfaces.	Of little value in the decontamination of large areas, longstanding contaminants and porous surfaces.
METHOD 3 Steam	Nonporous surfaces (especially painted or oiled surfaces).	Dissolves and erodes.	Work from top to bottom and from upwind. Clean surface at a rate of 4 sq ft/minute. The cleaning efficiency of steam will be greatly increased by using detergents.	Contamination may be reduced approximately 90% on painted surfaces.	Steam subject to same limitations as water. Spray hazard makes the wearing of waterproof outfits necessary.

Table 10-2 Area and Material Decontamination Methods (Continued)

METHOD	SURFACE	ACTION	TECHNIQUE	ADVANTAGES	DISADVANTAGES
METHOD 4 Detergents	Nonporous surfaces (metal, painted, glass, plastic, etc.).	Emulsifies contaminant and increases wetting power of water and cleaning efficiency of steam.	Rub surface 1 minute with a rag moistened with detergent solution then wipe with dry rag; use clean surface of the rag for each application. Use a power rotary brush with pressure feed for more efficient cleaning. Apply solution from a distance with a pressure proportioner. Do not allow solution to drip onto other surfaces. Mist application is all that is necessary.	Dissolves industrial film and other materials which hold contamination. Contamination may be reduced by 90%.	May require personal contact with surface. May not be efficient on long standing contamination.
METHOD 6 Organic solvents	Nonporous surfaces (greasy or waxed surfaces, paint or plastic finishes, etc.).	Dissolves organic materials (oil, paint, etc.).	Immerse entire unit in solvent or apply by wiping procedure (see Detergents).	Quick dissolving action. Recovery of solvent possible by distillation.	Requires good ventilation and fire precautions. Toxic to personnel. Material bulky. Mixed waste is likely to be generated, requiring special treatment/disposal methods.

Table 10-2 Area and Material Decontamination Methods (Continued)

METHOD	SURFACE	ACTION	TECHNIQUE	ADVANTAGES	DISADVANTAGES
METHOD 10 Trisodium phosphate	Painted surfaces (vertical, overhead).	Softens paint (mild method).	Apply hot 10% solution by rubbing and wiping procedure (see Detergent).	Contamination may be reduced to tolerance in one or two applications.	Destructive effect on paint. Should not be used on aluminum or magnesium.
METHOD 11 Abrasion	Nonporous surfaces.	Removes surface.	Use conventional procedures, such as sanding, filing and chipping; keep surface damp to avoid dust hazard.	Contamination may be reduced to as low a level as desired.	Impractical for porous surfaces because of penetration by moisture.
METHOD 12 Abrasive Grit Blasting	Nonporous surfaces.	Removes surface.	Keep grit wet to lessen spread of contamination. Collect used abrasive or flush away with water.	Practical for large surface area.	Contamination spread over area must be removed. Contaminated dust is personnel hazard and requires air supplied hoods and other special protective measures. Waste volume may increase significantly.
METHOD 13 Vacuum blasting	Porous and nonporous surfaces.	Removes surface; traps and controls contaminated waste.	Hold tool flush to surface to prevent escape of contamination.	Contaminated waste ready for disposal.	Contamination of equipment.

11. EMERGENCY RESPONSE

11.1 Emergency Plan

An emergency plan shall be developed and implemented describing Inquip response plans for anticipated emergencies (i.e., personal injuries, heat/cold stress, fire, severe weather, and chemical spills). The plan shall be in accordance with 29 CFR 1910.120, (L), (1), (2), (3), in writing.

11.1.1 Training

All personnel shall be instructed in basic site emergency notification and response procedures, including the capabilities and limitations of Contractor resources. This training will be included as part of the site safety and health orientation described in Section 8 of this plan. In addition, all employees shall be provided with training on the emergency plan. This training shall be provided and documented before field work begins.

11.2 First Aid/Medical Care For Injuries

Inquip shall ensure that at least one employee on the job site, per shift, has current first-aid and cardiopulmonary resuscitation (CPR) training as required by 29 CFR 1926.50(c), Medical Services and First Aid. In the event of an accident involving personal injury, the Inquip supervisor or his designee shall administer first aid and primary care with backup assistance as required.

Arrangements have been made with the local ambulance service to provide service to the Area 2 Site. Inquip shall maintain the capability to make emergency calls to ambulance services at all times. In most circumstances, an injured person will be taken to the nearest emergency room (St. Mary's Hospital). However, the ambulance staff may determine that another medical facility may be better suited to treat the individual based on the nature of the injury.

External Emergency Telephone Numbers

Sauget Fire Department
Cahokia Fire Department
Sauget Police Department
Cahokia Police Department
St. Claire County Sheriff
Illinois State Police
St. Marys Hospital (East St. Louis, IL)
(Emergency/Trauma Center)
Ambulance Service
Poison Control Center
National Response Center Washington, D.C.

Telephone Numbers

911 or 618/332-6700
618/337-5080
911 or 618/332-6507 or 6997
618/337-9505
911 or 618/277-3500
618/346-3990 (District 11)
618/274-1900

911
800/942-5969
800/424-8802

11.3 Heat/Cold Stress

In the event of a heat-related illness, protective clothing shall be removed and the worker relocated to a cool location for administration of first aid. Off-site medical assistance shall be requested immediately if heat stroke is suspected or if symptoms persist after first aid is administered.

Cold related injuries range from frostbite to hypothermia. Victims should be moved to a warm place and affected parts should be gently warmed by submersing them in warm water.

11.4 Fire

If a fire occurs in an area where combustible or flammable materials are present, the first action shall be evacuation of all personnel from the area to a remote location upwind of the fire. The local fire protection district shall be notified immediately and dispatched to the scene. Only those personnel trained in the use of fire extinguishers will be permitted to fight fires and then only in limited situations, such as small fires in uncontaminated areas where flammable liquids are not stored. Roll calls shall be made at designated rally points to verify that all persons have been accounted for.

11.5 Inclement Weather

In the event of tornado or severe thunderstorm warnings or the threat of other severe weather conditions, the on-site safety officer will notify employees. Employees shall immediately perform those tasks necessary to stabilize the work site and proceed to shelter.

11.6 Unusual Occurrence

If any unusual materials or substances are uncovered during operations, work shall cease in the affected work area and the Solutia representative shall be notified immediately.

11.7 Contingency Plan For Spills

11.7.1 Spill Notification

If unidentified or unanticipated substances are released during construction or excavation operations, Inquip shall cease operation and contact the Solutia representative immediately.

11.7.1.1 Spill Notification for Water Treatment Plants

Upon discovery of any spill or leak of process water, water treatment chemicals, or other hazardous materials, the applicable access control monitor shall be immediately notified of the following information:

- Materials involved.
- Estimated quantity.
- Location.
- Affected personnel.
- Other hazardous conditions.

An effort to shut down the system shall be made, as applicable, and response measures shall be implemented provided that no unprotected exposures occur.

In the event of accidental exposure to hazardous chemicals, appropriate emergency response action will be taken to remove the contaminated clothing. An emergency shower and eyewash station will be used to flush exposed skin and eyes, respectively. This equipment shall be maintained in a readily accessible location adjacent to the active work area.

If an acute exposure to airborne chemicals occurs or is suspected, and the affected individuals are unable to escape from the work area, Inquip shall immediately notify the Solutia representative for on-site and off-site assistance. No rescue operations shall be performed unless the rescuers are properly suited in Level B (SCBA) protection.

11.7.2 Response Procedures

Procedures for response to spills of hazardous material shall be developed in coordination with Solutia procedures. All spills of hazardous material must be properly cleaned-up and disposed of.

11.7.3 Reporting

The Subcontractor shall provide a complete report of any incident, outlining the causes, corrective actions, and measures taken to prevent recurrence of similar incidents.

11.8 Equipment and Services

Appropriate equipment and services shall be available to respond promptly to emergency events involving personal injury or other emergency situations.

An inventory list describing the minimum emergency response and spill equipment to be maintained by Inquip and made available for emergency use. These items shall be maintained in an accessible location near the work area.

11.9 Confined Space Rescue

All personnel designated as emergency rescue personnel for confined spaces must meet training requirements under Section 8.1.7 of the HASP and 29 CFR 1910.146, Permit Required Confined Spaces.

12. REFERENCES

American Conference of Governmental Industrial Hygienists, Inc. *TLVs and BEIs: Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices*. ISBN: 1-882417-19-7.

Sax, N.I. and R. J. Lewis, Sr. *Dangerous Properties of Industrial Materials*, Seventh Edition, Volume II. Van Nostrand Reinhold, New York. 1989.

U. S. Department of Health and Human Services. *NIOSH Pocket Guide to Chemical Hazards*, DHHS (NIOSH) Publication No. 90-117. June 1990.

URS Corporation. *Groundwater Migration Control systemSauget Area 2 Superfund Site Volume 3C Health and Safety Plan*, . Prepared for Solutia Inc., Maryland Heights, MO. December 2002.

REGULATIONS

10 CFR 835	<i>Occupational Radiation Protection</i>
29 CFR 1910	<i>Occupational Safety and Health Standards</i>
29 CFR 1926	<i>OSHA Construction Industry Standards</i>
40 CFR 761.125	<i>EPA PCB Regulations</i>
10 CSR 10-6	<i>Air Quality Standards, Definitions, Sampling, and Reference Methods and Air Pollution Control Regulations for the Entire State of Missouri</i>

STANDARDS

ANSI B30	<i>Safety Standards for Cableways, Cranes, Derricks, Hoists, Hoods, Jacks, and Slings</i>
ANSI 288.2-180	<i>Practices for Respiratory Protection</i>
ANSI Z89.1	<i>Protective Headware for Industrial Workers</i>
ANSI N543	<i>General Safety Standard for Installation using Non Medical X-Ray and Sealed Gamma-Ray Sources, Energies Up to 10 MeV</i>
ANSI Z87.1	<i>Occupational and Educational Eye and Face Protection</i>
ANSI UL586	<i>High Efficiency Particulate Air Units</i>

APPENDIX D
List of Ozone-Depleting Chemicals

LIST OF OZONE-DEPLETING CHEMICAL	
Class I Substance	Class II Substances
Group 1	Hydrochlorofluorocarbon-21 (HCFC-21)
Chlorofluorocarbon-11 (CFC-11)	Hydrochlorofluorocarbon-22 (HCFC-22)
Chlorofluorocarbon-12 (CFC-12)	Hydrochlorofluorocarbon-31 (HCFC-31)
Chlorofluorocarbon-113 (CFC-113)	Hydrochlorofluorocarbon-121 (HCFC-121)
Chlorofluorocarbon-114 (CFC-114)	Hydrochlorofluorocarbon-122 (HCFC-122)
Chlorofluorocarbon-115 (CFC-115)	Hydrochlorofluorocarbon-123 (HCFC-123)
	Hydrochlorofluorocarbon-124 (HCFC-124)
Group II	Hydrochlorofluorocarbon-131 (HCFC-131)
Halon-1211	Hydrochlorofluorocarbon-132 (HCFC-132)
Halon-1301	Hydrochlorofluorocarbon-133 (HCFC-133)
Halon-2402	Hydrochlorofluorocarbon-141 (HCFC-141)
	Hydrochlorofluorocarbon-142 (HCFC-142)
Group III	Hydrochlorofluorocarbon-221 (HCFC-221)
Chlorofluorocarbon-13 (CFC-13)	Hydrochlorofluorocarbon-222 (HCFC-222)
Chlorofluorocarbon-111 (CFC-111)	Hydrochlorofluorocarbon-223 (HCFC-223)
Chlorofluorocarbon-112 (CFC-112)	Hydrochlorofluorocarbon-224 (HCFC-224)
Chlorofluorocarbon-211 (CFC-221)	Hydrochlorofluorocarbon-225 (HCFC-225)
Chlorofluorocarbon-212 (CFC-212)	Hydrochlorofluorocarbon-226 (HCFC-226)
Chlorofluorocarbon-213 (CFC-213)	Hydrochlorofluorocarbon-231 (HCFC-231)
Chlorofluorocarbon-214 (CFC-214)	Hydrochlorofluorocarbon-232 (HCFC-232)
Chlorofluorocarbon-215 (CFC-215)	Hydrochlorofluorocarbon-233 (HCFC-233)
Chlorofluorocarbon-216 (CFC-216)	Hydrochlorofluorocarbon-234 (HCFC-234)
Chlorofluorocarbon-217 (CFC-217)	Hydrochlorofluorocarbon-236 (HCFC-235)
	Hydrochlorofluorocarbon-241 (HCFC-241)
Group IV	Hydrochlorofluorocarbon-242 (HCFC-242)
Carbon tetrachloride	Hydrochlorofluorocarbon-243 (HCFC-243)
	Hydrochlorofluorocarbon-244 (HCFC-244)
Group V	Hydrochlorofluorocarbon-251 (HCFC-251)
Methyl chloroform	Hydrochlorofluorocarbon-252 (HCFC-252)
	Hydrochlorofluorocarbon-253 (HCFC-253)
	Hydrochlorofluorocarbon-261 (HCFC-261)
	Hydrochlorofluorocarbon-262 (HCFC-262)
	Hydrochlorofluorocarbon-271 (HCFC-271)

APPENDIX E

Mobile Crane Safety Inspection Report

MOBILE CRANE SAFETY INSPECTION REPORT

CUSTOMER:		CONTACT:		JOB NO:	AUTHORITY:
ADDRESS:		PHONE NO:	LOCATION:	INSPECT. DATE:	OSHA 1910.180 <input type="checkbox"/>
MANUFACTURER:	CAPACITY:	SER. NO:	MODEL NO:	UNIT NO:	OSHA 1926.550 <input type="checkbox"/>
					STATE: _____ <input type="checkbox"/>
					ANNUAL: <input type="checkbox"/>
					QUADRENNIAL: <input type="checkbox"/>
					_____ <input type="checkbox"/>
DESCRIPTION	ITEM NO.	SAT.	UNSAT.	N/A	COMMENTS
RECORDS					
Annual Inspection	1				
· Operator instructions	2				
· Preventive maintenance records	3				
Hand signal charts	4				
· Proper load charts	5				
Properly marked operator controls, levels, diagrams	6				
Required information/warning decals	7				
	8				
	9				
SAFETY EQUIPMENT					
Warning device(s)/Backup alarm	10				
Safety and machine guards	11				
Access provisions (railings, etc.)	12				
Fire extinguishers	13				
Anti-two block	14				
	15				
	16				

HOIST SYSTEMS					
Sheave assemblies	17				
· Equalizer sheave and pin	18				
· Load block assembly(s)	19				
Counterweight hooks and bolts	20				
· Hooks tram/throat	21				
Hook NDT	22				
	23				
	24				
BOOM/JIB					
· Boom and attachments	25				
· Boom rotation assy. locks & brakes	26				
· Boom hoist lock or pawl	27				
· Boom and jib back stops	28				
· Automatic boom kickout	29				
· Outrigger assembly(s)	30				
· Wedge sockets	31				
· Wedge sockets	32				
Drums	33				
	34				
	35				

LUBE SYSTEMS/GAUGES					
Gauges (oil, etc.) and gauge ports	36				
	37				
	38				
MISCELLANEOUS					
Superstructure (main frame, glass)	39				
Bolts, nuts, rivets, mounts, brackets	40				
· Air/hydraulic system; cylinders	41				
· Hoses; fittings	42				
Muffler/exhaust system	43				
Housekeeping	44				
Brakes	45				
	46				
CRAWLER CAR BODY					
Steering	47				
Weldments	48				
Bolts	49				
Tracks	50				
Track drive	51				
	52				
	53				

WIRE ROPE & HOOK CONDITION REPORT					
Main Hoist	54				
Aux. Hoist	55				
Aux. Hoist	56				
Pendants	57				
Pendants	58				
Jib Stays	59				
Boom Hoist	60				
	61				
	62				

ALL UNSATISFACTORY WIRE ROPE SHALL BE REPLACED AS PER ORIGINAL MANUFACTURER'S RECOMMENDATIONS

As of this date _____, the unit described above has been found to be in the above condition. It is understood that this inspection does not preclude the necessity to perform frequent and periodic inspections in conjunction with a regular maintenance program in accordance with manufacturer's specifications and/or Federal, State and local guidelines, as applicable. This inspection does not constitute a warranty or guaranty of the performance of the above equipment.

Company Representative
Date

Inspector

Date

APPENDIX F
Medical Evaluation Report Form

MEDICAL EVALUATION REPORT

PATIENT'S NAME: _____

DATE OF EXAMINATION: _____

TYPE OF EXAMINATION: ☐ BASELINE ☐ ANNUAL ☐ EXIT ☐ SPECIAL

☐ I hereby certify that the above named patient has completed a medical examination on the date indicated above in accordance with that specified by the MK-Ferguson Company and the applicable OSHA standard(s) cited below. Based upon my examination, I certify that the above named individual:

☐ IS QUALIFIED TO WEAR AIR PURIFYING AND AIR SUPPLIED RESPIRATORS IN ACCORDANCE WITH 29 CFR 1910.134.

☐ IS MEDICALLY QUALIFIED FOR WORK AT HAZARDOUS WASTE SITES, INCLUDING WEARING OF RESPIRATORS AND CHEMICAL PROTECTIVE CLOTHING, IN ACCORDANCE WITH 29 CFR 1910.120.

☐ IS MEDICALLY QUALIFIED FOR ASBESTOS ABATEMENT WORK, INCLUDING THE USE OF RESPIRATORS AND PROTECTIVE CLOTHING, IN ACCORDANCE WITH 29 CFR 1926.1101.

☐ SHOULD BE RESTRICTED FROM THE FOLLOWING ACTIVITIES:

PLEASE CHECK THE FOLLOWING COMPONENTS INCLUDED AS PART OF THE MEDICAL EXAMINATION:

☐ IN DEPTH MEDICAL HISTORY☐ CHEST X-RAY☐ VISION☐ IN DEPTH OCCUPATIONAL HISTORY☐ URINALYSIS☐ EKG☐ FULL PHYSICAL EXAMINATION☐ COMPLETE BLOOD COUNT☐ ARSENIC-URINE☐ VITAL SIGNS☐ BLOOD CHEMISTRY PROFILE☐ PCB-SERUM☐ AUDIOMETRY☐ TETANUS IMMUNIZATION☐ BLOOD LEAD (optional)

SPIROMETRY

CARDIAC STRESS TEST

CADIUM-LEAD AND URINE (optional)

PHYSICIANS COMMENTS AND/OR RECOMMENDATIONS FOR FURTHER MEDICAL EVALUATION BY PERSONAL PHYSICIAN:

PHYSICIAN'S SIGNATURE_____
PRINT NAME OF PHYSICIAN_____
DATE

APPENDIX G
Components of Medical Examinations

COMPONENTS OF MEDICAL EXAMINATION

1. In-Depth Medical History
2. In-Depth Occupational History
4. Full Physical Examination by an Occupational Health Physician
5. Vital Signs
6. Audiometry
7. Spirometry (Pulmonary Function Test)
 - Forced Vital Capacity
 - Forced Expiratory Volume at One Second
8. Chest X-ray (every 5 years or at discretion of attending physician).
9. Urinalysis with microscopic Examination
10. Complete Blood Count (CBC) with Differential
11. Blood Chemistry Profile (SMAC 24)
 - Alb/Glob Ratio
 - Albumin
 - Alkaline Phosphatase
 - Bilirubin (direct, indirect and total)
 - BUN/Creatinine Ratio
 - Calcium
 - Chloride
 - Cholesterol
 - Creatinine
 - Globulin
 - Glucose
 - Iron
 - LDH
 - Phosphorus
 - Potassium
 - SGOT/SGPT
 - Sodium
 - Total Protein
 - Triglycerides
 - Urea Nitrogen (BUN)
 - Uric Acid
12. Tetanus Immunization (current)
13. Cardiac Stress Test (for all personnel involved in heavy manual lifting activities)
14. Vision
15. EKG (every year or at discretion of attending physician).
16. Arsenic-Urine
17. PCB-Serum

ADDITIONAL OPTIONS

- Blood Lab - when significant potential for lead exposure exists.
- Cadmium - personnel performing torch cutting activities.

APPENDIX H
Emergency and Spill Response Equipment List

Subcontractor Emergency and Spill Response Equipment List

ITEM	MINIMUM QUANTITY
Fire extinguishers - Dry chemical	(a)
Portable eye wash	one unit within 50 ft of personnel working with corrosives or other materials which can damage the eye. ^(b)
First-aid kit, 24-unit construction type	one for every 10 employees ^(c)
Granular absorbent clay	Sufficient quantities to contain any spills which may potentially occur.
Containers for spill cleanup materials	(d)

- (a) 20-lb ABC extinguisher shall be provided for each fueling area. 5-lb ABC extinguishers shall be kept at each job trailer. 2.5 gal water extinguishers (or an equivalent water supply) shall be kept near torch cutting or abrasive saw cutting operations. All vehicles transporting 50 gal or more of flammable or combustible liquids are required to carry 5-lb ABC fire extinguishers or larger units.
- (b) Eyewash units shall have sufficient capacity to provide 15 minutes of flushing of both eyes.
- (c) May use equivalent bulk supplies in the job trailer.
- (d) Containers shall be of sufficient quantity and capacity to contain the required quantity of absorbent clay, as well as associated spill-cleanup debris.

APPENDIX I
Emergency Evacuation Roster/Emergency Response Plan

Department: _____

Department Personnel

Person Responsible
for Visitor[illegible]

APPENDIX K
Competent Persons Checklist

Competent Persons Checklist

Project Title: _____

Prime Subcontractor: _____

Subcontract No.: _____

Competent Person Requirements

The *Competent Person* requirements contained in 29 CFR 1926 Construction Standards have been specifically reprinted in this checklist to highlight the specific OSHA standards that requires a *Competent Person*.

- Employers, managers and supervisors who appoint individuals as *Competent Persons*, shall ensure that those individuals know the requirements and accept the responsibility of a *Competent Person*.
- Individuals appointed to be a *Competent Person* shall be trained in the recognition and avoidance of unsafe conditions and in the regulations/standards and equipment for which they are appointed as *Competent Person*. Training records shall be available upon request.
- Individuals appointed as a *Competent Person* shall have the authority to control, eliminate or correct any hazards or other exposures to illness or injury.

1. 1926.20 (1) (2) **ACCIDENT PREVENTION RESPONSIBILITIES - SUBPART C**

Applicable to Project: Yes _____ No _____

(If Yes) Competent person is _____

2. 1926.58 (e) (6) (ii) **REQUIREMENTS FOR ASBESTOS COMPETENT PERSON**

Applicable to Project: Yes _____ No _____

(If Yes) Competent person is _____

3. 1926.58 (e) (6) (iii) **TRAINING**

Applicable to Project: Yes _____ No _____

(If Yes) Competent person is _____

6. 1926.101 (b) **PROTECTIVE EQUIPMENT SUBPART E**

Applicable to Project: Yes _____ No _____

(If Yes) Competent person is _____

7. 1926.345 (a) **WELDING SUBPART I**

Applicable to Project: Yes _____ No _____

(If Yes) Competent person is _____

8. 1926.404 (b) (i) (iii) (B) **ELECTRICAL SUBPART K**

Applicable to Project: Yes _____ No _____

(If Yes) Competent person is _____

9. 1926.451 (a) (3) **SCAFFOLDING SUBPART L**

Applicable to Project: Yes _____ No _____

(If Yes) Competent person is _____

10. 1926.451 (h) (14) **SCAFFOLDING SUBPART L**

Applicable to Project: Yes _____ No _____

(If Yes) Competent person is _____

12. 1926.550 (a) (5) **CRANES AND DERRICKS SUBPART N**

Applicable to Project: Yes _____ No _____

(If Yes) Competent person is _____

13. 1926.550 (a) (6) **CRANES AND DERRICKS SUBPART N**

Applicable to Project: Yes _____ No _____

(If Yes) Competent person is _____

14. 1926.550 (g) (5) (iv) **CRANES AND DERRICKS SUBPART N**

Applicable to Project: Yes _____ No _____

(If Yes) Competent person is _____

15. 1926.550 (g) (5) (vi) **CRANES AND DERRICKS**

Applicable to Project: Yes _____ No _____

(If Yes) Competent person is _____

16. 1926.552 (c) (15) **HOISTING EQUIPMENT**

Applicable to Project: Yes _____ No _____

(If Yes) Competent person is _____

17. 1926.651 (c) (1) (i) **ACCESS OR EGRESS**

Applicable to Project: Yes _____ No _____

(If Yes) Competent person is _____

18. 1926.651 (h) (2) **EXCAVATIONS SUBPART P**

Applicable to Project: Yes _____ No _____

(If Yes) Competent person is _____

19. 1926.651 (h) (3) **EXCAVATIONS SUBPART P**

Applicable to Project: Yes _____ No _____

(If Yes) Competent person is _____

20. 1926.651 (k) (1) **EXCAVATIONS SUBPART P**

Applicable to Project: Yes _____ No _____
(If Yes) Competent person is _____

21. 1926.651 (k) (2) **EXCAVATIONS SUBPART P**

Applicable to Project: Yes _____ No _____
(If Yes) Competent person is _____

22. 1926.652 (a) (1) (ii) **EXCAVATIONS SUBPART P**

Applicable to Project: Yes _____ No _____
(If Yes) Competent person is _____

23. 1926.652 (d) (3) **EXCAVATIONS SUBPART P**

Applicable to Project: Yes _____ No _____
(If Yes) Competent person is _____

37. 1926.803 (a) (1) **COMPRESSED AIR**

Applicable to Project: Yes _____ No _____
(If Yes) Competent person is _____

42. 1926.1053 (b) (15) **LADDER INSPECTIONS**

Applicable to Project: Yes _____ No _____
(If Yes) Competent person is _____

43. 1926.1060 (a) (1) **TRAINING REQUIREMENTS FOR STAIRWAYS AND LADDERS SUBPART X**

Applicable to Project: Yes _____ No _____
(If Yes) Competent person is _____